

SELECTION OF QUALIFIED RETIREMENT PLAN
DISTRIBUTION OPTIONS: A SIMULATION

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DISTRIBUTION OPTIONS: A SIMULATION

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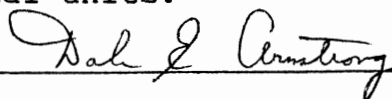
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Scope and Method of Study: The dual objectives of this study were (1) to develop decision guidelines in selecting qualified retirement plan distribution options for taxpayers with varying profiles and retirement plan characteristics (e.g., income tax bracket, estate taxes, taxpayer's life expectancy, spouse's life expectancy, employee contributions to the plan, and pre-1974 contributions) and (2) to evaluate the impact of recent income and estate tax legislation on these decision guidelines. A deterministic computer simulation model was formulated to examine the impact of the tax provisions which were in effect for the 1985 tax year and the Tax Reform Act of 1986 (TRA-1986) provisions on the selection of qualified retirement plan distribution methods. When analyzing each variable set in selecting the optimal distribution option, the decision criterion utilized is the option which results in the maximum amount bequeathed to the taxpayer's beneficiaries.

Findings and Conclusions: In general, the results of the analysis of the distribution options under qualified retirement plans indicate that the tax provisions can be considered as an important factor in the selection by the taxpayer of the appropriate distribution option. Specifically, the different income tax treatments for several of the available distribution options were found to have a material effect on the amount bequeathed to the taxpayer's beneficiaries. Also, the findings of this research indicate that the changes in the tax laws can cause a shift in the optimal distribution option depending on the taxpayer profile and the life expectancies of the taxpayer and spouse. In addition, the postponement of the final distribution of the retirement plan, which appears to be encouraged by TRA-1986, may have income tax policy implications. The deferral of the final distribution may result in a reduction in the possible current income tax revenue that is available to the federal, state, and local governmental units.

ADVISER'S APPROVAL



CHAPTER I

INTRODUCTION

According to the Statistical Abstract of the United States: 1985 (1984), over 40 percent of the employees of private companies are participating in pension plans. With the uncertainty related to the future funding of the social security system, these pension retirement plans are becoming an even more important consideration in the employee's plans for retirement. As the employee approaches retirement age, he or she faces the decision of which distribution option should be selected for his or her qualified retirement plan. Unfortunately, for employees who have qualified retirement plans, there have been substantial income and estate tax changes related to these plans since 1984 making the optimal selection of distribution options even more difficult.

Employees in qualified retirement plans have several options available to them relating to the distribution of the funds at retirement. The options available may vary to some degree from one qualified plan to another. However, the majority of the employees in qualified retirement plans have similar types of options from which to select. The method of distribution selected by the employee may

influence not only the dollar amount available for the employee's use, but also the amount that will be available to the taxpayer's beneficiaries. Basically, the employee may request that his or her qualified plan balance be distributed in a lump-sum distribution or be distributed in the form of installments or an annuity over the lives of the employee and his or her spouse.

If the distribution is in the form of an annuity, the income tax is paid in each year that the annuity payments are received. On the other hand, the lump-sum distribution for income tax purposes can be handled under two methods. The first method involves the payment of the income taxes on the entire distribution in the year received with the remaining after tax balance to be invested as desired. The second choice permits the employee (surviving spouse) to roll over the lump-sum distribution to an Individual Retirement Account (IRA) with no income taxes to be paid until the IRA is distributed. However, this option is not available for nonspousal beneficiaries.

For estate tax purposes, after 1984 the value of the retirement plan benefits must be included in the decedent's gross estate. The distribution option selected may affect the amount included in the decedent's estate. If the estate is subject to estate taxes, the amount that can be bequeathed to the taxpayer's beneficiaries will be reduced. Therefore, the determination of estate taxes potentially

could influence the retirement distributions which should be chosen.

In addition, the Tax Reform Act of 1986 (TRA-1986) has made several changes in the income tax laws. For example, the income tax rates have been changed from a multi-tier tax rate schedule to a "two-tier" tax rate schedule. Also, the regular income averaging method has been repealed by TRA-1986. Further, TRA-1986 has converted the ten-year averaging method to a five-year averaging method. These changes along with other changes to be discussed later may also affect the optimal distribution option which should be selected at retirement.

It is the intent of this study to develop decision guidelines for taxpayers with different profiles in choosing distribution options under qualified retirement plans. Also, this study will examine how recent tax legislation has affected or would affect these decision guidelines.

Statement Of Purpose

It is a common practice for companies to make available to their employees qualified retirement plans. These plans not only provide for distributions during retirement, but also may become part of the employee's estate. For most employees the qualified plan benefits are possibly the most significant asset in his or her estate.

Since this benefit paid to survivors is such a significant asset in the estate of most employees, it is important that the distribution be handled so that the desired needs of the employee's family are accomplished. The method of distribution chosen by the employee may influence whether his or her desired family estate objectives are achieved.

Depending on the employee's estate objectives and tax factors, the employee may request that his or her qualified retirement fund balance be treated as an annuity for a designated beneficiary or have the entire balance distributed immediately in a lump-sum to a specified beneficiary. Further, the annuity or the lump-sum distribution may involve either certain required tax treatments or additional possible distribution options. For example, the annuity could begin upon the retirement (death) of the employee or the annuity payments could be delayed until the employee (surviving spouse) attains the age of 70 1/2.

Potential distribution methods for qualified retirement plans are shown in Table I.

The advantages and disadvantages of the distribution methods presented in Table I potentially have been altered by the revision of the income and estate tax laws enacted since 1984. There are two objectives of this study. One objective of this study is to develop decision guidelines in selecting qualified retirement plan distribution options for taxpayers with varying profiles and retirement plan characteristics (e.g., income tax bracket,

TABLE I
DISTRIBUTION METHODS

ANNUITIES

1. Begin the annuity payments at the retirement (death) of the employee
2. Begin the annuity payments when the employee (surviving spouse) reaches the age of 70 1/2

LUMP-SUM DISTRIBUTION--INCOME TAXES PAID IMMEDIATELY

1. Taxed as a capital gain and five-year (ten-year) averaging
2. Taxed using only ten-year averaging

LUMP-SUM DISTRIBUTION--ROLLED OVER INTO AN IRA

1. Begin the annuity payments when the employee (surviving spouse) reaches the age of 70 1/2
 2. Lump-sum distribution
-

estate taxes, taxpayer's life expectancy, spouse's life expectancy, employee contributions to the retirement plan, pre-1974 contributions). The second objective is to evaluate how recent tax legislation has affected these decision guidelines. In evaluating the distribution options available, the dollar amount bequeathed to the taxpayer's beneficiaries is to be compared under each option.

Methodology

In this research study a deterministic simulation model is employed to examine the impact of the tax provisions which were in effect for the 1985 tax year and the Tax Reform Act of 1986 (TRA-1986) provisions on the selection of qualified retirement plan distribution methods. The simulation model used in this research incorporates three classes of variables: (1) the decision variables, (2) the taxpayer variables, and (3) the plan variables.

The decision variables include the distribution options and the age that the taxpayer selects for distribution (65 and 70 1/2). The distribution options examined in this research are: (1) joint annuity with the spouse, (2) lump-sum distribution with the election to pay income taxes immediately, (3) lump-sum distribution with the election by the taxpayer to roll over the entire amount to an IRA, (4) lump-sum distribution with the election by the

surviving spouse to roll over the entire amount to an IRA, and (5) an annuity elected by the surviving spouse.

The taxpayer variables investigated in this research are the life expectancy of the taxpayer and the spouse (two years, ten years, and 20 years), the taxpayer profile, and the percentage of assets owned by the spouse (0 and 50 percent). The taxpayer profile (low, middle and high) incorporates the following factors: (1) the income tax bracket, (2) the estate tax, (3) the amount of plan benefits at the age of 65, (4) the annual earnings rate, (5) the percentage of retirement income consumed annually, and (6) the dollar value of the other assets owned by the taxpayer.

The plan variables include the percentage of pre-1974 participation in the qualified retirement plan (0 and 25 percent) and the percentage of nondeductible employee contributions to the qualified retirement plan (0 and 12 percent). In addition, when the spouse selects the distribution option, the age difference between the spouses (the same age, five years younger, and ten years younger) is a factor examined in this research.

When analyzing each variable set in selecting the optimal distribution option, the decision criterion utilized in this research is the option which results in the maximum amount being bequeathed to the taxpayer's beneficiaries.

Limitations

One of the limitations of this study is that only the impact of the federal income and estate taxes is considered. The state income taxes and the state inheritance taxes are ignored, because not all states have these taxes. Also, there is a wide variation in the tax codes from state to state. As a result, it seems inappropriate to generalize over such diversified laws; but, it also seems unreasonable to include one state's tax provisions to the exclusion of another. Therefore, these taxes are not investigated in this research.

Another limitation of this research study, as well as others employing the simulation technique, is that it is necessary to make certain assumptions to facilitate the simulation procedure. One of the assumptions used in this research is that a taxpayer would desire to leave an estate. But, there may be taxpayers who would prefer to personally consume all of their retirement funds because they have no desire to leave an estate either to a particular individual or charitable organization. The other assumptions utilized in this research study will be presented in Chapter II.

A major limitation of this research study, as well as others employing similar methodology, is that the deterministic simulations selected may not perfectly fit the situations of all the potential users of the research. However, the simulation technique can be used to help develop decision rules for taxpayers with different profiles. Since

this analysis incorporates a larger number of relevant variables than related studies concerning distributions from qualified retirement plans, this research will hopefully improve decision guidelines for most taxpayers in making this important decision.

Furthermore, there is one additional benefit derived from the model to be developed in this study. The generalized model can be used by any taxpayer in making his or her own personal retirement decision by inserting the specific data required by the model.

Statement Of Significance

The literature review has not disclosed any research which comprehensively evaluates the total impact of the 1985 tax provisions and the tax provisions under TRA-1986 on the distribution options of a qualified retirement plan. The majority of the articles either consisted of legalistic discussion of the basic provisions affecting distributions from qualified retirement plans or limited illustrations of distributions. This research study, unlike most others, comprehensively analyzes the complex tax variables which can be critical in deciding on the appropriate distribution option from a qualified retirement plan.

The contribution of this study is the development of models, encompassing all relevant income and estate tax provisions, which generate estimates of the dollar amount available to the taxpayer's beneficiaries under varying

assumptions as to decision variables, taxpayer variables and retirement plan variables. These models should be beneficial for both tax planning and tax policy purposes in analyzing the impact of the 1985 tax provisions and the TRA-1986 tax provisions on the optimal distribution option for qualified retirement plans.

Chapter Descriptions

Chapter II consists of two major parts. The first part presents a comprehensive discussion of all relevant tax provisions for both the 1985 tax year and TRA-1986 concerning distributions from qualified retirement plans. The second part presents a brief discussion of various related tax research which have previously been conducted.

Chapter III explains the research approach and methodology used in this research. There is also a description of the variables utilized in this research.

Chapter IV reports the results of the study when the 1985 tax year provisions are used. Chapter V compares the results when the TRA-1986 provisions are utilized to the results when the 1985 tax year provisions are assumed.

In Chapter VI a brief summary of the findings of the study is presented. In addition, there is a discussion of the significance and implications of the findings of the study. Finally, the author concludes with a few suggestions for further research concerning distributions from qualified retirement plans.

CHAPTER II

REVIEW OF THE RELEVANT TAX PROVISIONS AND LITERATURE

The following review of the tax provisions and literature is organized into two major categories. The first section reviews the income and estate tax provisions related to distributions from qualified retirement plans. The second section consists of a review of the literature on distributions from qualified retirement plans.

Analysis Of Relevant Tax Provisions

This section involves a review of the past and present income and estate tax provisions associated with the various distribution options from qualified retirement plans. The review is divided into three parts. First, the specific tax distribution requirements of qualified retirement plans are examined. Then, the income tax treatments of these distributions are presented. Finally, the applicable estate tax provisions are investigated. To give the reader an overall view of the relevant tax laws before discussing the tax laws in detail, Table II, Summary of Applicable Tax Provisions, is presented.

TABLE II
SUMMARY OF APPLICABLE TAX PROVISIONS

Tax Reform Act Of 1986	1985	1984	1983	1982	1981
<u>Estate Taxes:</u>					
Same as 1985	The value of an annuity or lump sum distribution is included in the gross estate	Up to \$100,000 excluded from the gross estate	Same as 1984	Annuity and lump sum distribution excluded from the gross estate	Same as 1982
		Exception to the exclusion from the estate—if 10-year averaging is elected	Same as 1984	Same as 1984	Same as 1984
Same as 1985	Unlimited marital deduction	Same as 1985	Same as 1985	Same as 1985	Marital deduction is limited to \$250,000
A 15% tax on excess retirement accumulation	Not applicable prior to 1987	Same as 1985	Same as 1985	Same as 1985	Same as 1985
<u>Lump-Sum Distribution—Taxed Immediately:</u>					
No capital gain treatment	For calculation of capital gain treatment, the employee's balance does not include the accrued voluntary deductible employee contributions	Same as 1985	Same as 1985	Same as 1985	Voluntary deductible employee contributions were not allowed prior to 1982
Exception to the capital gain treatment if the taxpayer is at least 50 years old before 1/1/86	Not applicable prior to 1986	Same as 1985	Same as 1985	Same as 1985	Same as 1985
Lump sum distribution can be taxed using the five year averaging method. Exception—ten year averaging is allowed if the taxpayer was 50 years old on 1/1/86	Lump sum distribution can be taxed using the ten-year averaging method	Same as 1985	Same as 1985	Same as 1985	Same as 1985
<u>Annuity:</u>					
Same as 1985	Distributions are to be made over the life expectancy of the employee and a designated beneficiary	Distributions made over the life expectancy of the employee and spouse	Same as 1984	Same as 1984	Same as 1984

TABLE II
(CONTINUED)

<u>Tax Reform Act Of 1986</u>	<u>1985</u>	<u>1984</u>	<u>1983</u>	<u>1982</u>	<u>1981</u>
Same as 1985	If an employee dies before the distribution begins, the entire balance must be distributed within 5 years	Distribution as an annuity to spouse was implied	Same as 1984	Same as 1984	Same as 1984
Same as 1985	Exception to 5 year rule—if an annuity begins for a designated beneficiary within one year after the employee dies	Distribution as an annuity to spouse was implied	Same as 1984	Same as 1984	Same as 1984
Same as 1985	Exception to 5 year rule for spouse—distribution does not have to begin until spouse attains the age of 70 1/2	Not an option prior to 1985	Same as 1984	Same as 1984	Same as 1984
Same as 1985	If the surviving spouse dies before the distribution begins, the 5 year rule begins with the death of the surviving spouse	Not an option prior to 1985	Same as 1984	Same as 1984	Same as 1984
Annuity exclusion allows only up to the taxpayer's cost of the annuity	Not applicable prior to 1987	Same as 1985	Same as 1985	Same as 1985	Same as 1985
Taxpayers can deduct unrecovered annuity cost on their last tax return	Not applicable prior to 1987	Same as 1985	Same as 1985	Same as 1985	Same as 1985
<u>Partial Distributions:</u>					
Same as 1985	Tax-free rollover treatment is available if at least 50% of the employee's fund balance is rolled over to an IRA	Only 100% distribution could qualify for the tax-free rollover to an IRA	Same as 1984	Same as 1984	Same as 1984
Same as 1985	If partial distribution rule is used, the subsequent distributions do not qualify for 10-year or capital gain treatment	No partial distribution qualified for a rollover tax-free to an IRA prior to 1985	Same as 1984	Same as 1984	Same as 1984
<u>Average Income Tax Method:</u>					
Repealed	Averageable income calculated based on 140%	Average income calculated based on 120%	Same as 1984	Same as 1984	Same as 1984
Repealed	Base period is 3-taxable years	Base period is 4-taxable years	Same as 1984	Same as 1984	Same as 1984
<u>Excess Distribution</u>					
A 15% tax on excess distributions	Not applicable prior to 1987	Same as 1985	Same as 1985	Same as 1985	Same as 1985

Distribution Requirements

Prior to 1985 qualified plan distributions were allowed to be extended only over the lives of the employee and the spouse and not over the lives of a nonspousal beneficiary. But, Congress became concerned in 1984 that these prior distribution rules were too restrictive. Specifically, it was felt that individuals other than a spouse should be permitted to receive distributions from a qualified plan in forms other than a lump-sum distribution or payments over a period shorter than five years (JCS-41-84 [December 31, 1984], p. 809). For this reason, Congress enacted the provision that distributions can be made based on the remaining life of the nonspousal beneficiary upon the death of the employee if this option is elected within one year of the employee's death.¹ Also, the life expectancies of the employee and the spouse may be redetermined after 1984, but not more often than once a year.² There was no provision for redetermination of the life expectancies prior to 1985.

After 1984 an annuity must require that if the distribution had started before the death of the annuitant, the remaining balance must be distributed at least as rapidly as the method of distribution in effect prior to the annuitant's death.³ There was no specific code requirement regarding this situation before 1985.

After 1984, as applicable to annuities, when the designated beneficiary is the surviving spouse of the annuitant, the spouse is considered to be the holder of the

contract (i.e., the surviving spouse is considered to be the annuitant).⁴ In other words, an annuity does not have to begin until the surviving spouse, instead of the original annuitant, attains the age of 70 1/2. Likewise, there is a similar provision pertaining to a qualified retirement plan.⁵

However, if the surviving spouse who was the designated beneficiary dies before distribution from the qualified plan has started, the distribution from the qualified retirement account balance must be made within five years of the death of the surviving spouse.⁶ Also, it appears that if the last spouse dies after a partial distribution from a qualified retirement plan, but before the remaining balance of the account has been distributed, the remaining balance has to be distributed by the end of the fifth year after the death of the last spouse.⁷

After 1984, for annuities and IRAs, there is an exception to the required complete distribution before the end of the fifth year. This requirement can be ignored if within one year of the death of the employee (surviving spouse), the portion of the contract designated for a specific beneficiary is distributed over the life of that beneficiary.⁸ Prior to 1985 there was an exception for IRAs only if a term certain distribution had previously commenced.

If a distribution from a qualified plan is paid to the spouse of the employee after the employee's death, the spouse is considered as the employee for the purpose of

rolling over the distribution into an IRA.⁹ Before 1983 it was possible for a nonspousal beneficiary to inherit an IRA from the decedent and to treat this account as if the beneficiary had made the contributions. However, the option of a nonspousal beneficiary to roll over an inherited IRA into his or her own IRA tax free in effect resulted in a decedent's IRA balance not being distributed within the required five year period after the individual's death. To ensure that distribution from an IRA is made within the required time period, the option of treating an inherited IRA as the nonspousal beneficiary's contribution to his or her own IRA was eliminated (JCS-38-82 [December 31, 1982], p. 312).

After 1988 the distribution from qualified retirement plans or from IRAs will have to begin no later than April 1 of the year after the taxpayer attains the age of 70 1/2.¹⁰ For the tax years 1985 through 1987, it is not necessary for distributions from qualified retirement plans to begin until April 1 of the year after the taxpayer (surviving spouse) has attained the age of 70 1/2 or after the taxpayer has retired, whichever occurs later.¹¹ Prior to 1985 the qualified retirement distributions were required to begin in the tax year in which the contract holder (surviving spouse) attained the age of 70 1/2 or after the taxpayer had retired, whichever was the last to occur. For the tax years after 1984 but before 1988, the distribution from an IRA also does not have to begin until April 1 of the year after the contract holder (surviving spouse) has reached the

age of 70 1/2.¹² For the tax years before 1985, the IRA distributions were required to begin in the tax year in which the contract holder (surviving spouse) attained the age of 70 1/2.

Income Tax Treatment

Annuities. If the distribution is in the form of an annuity, the income tax is paid in the years that the annuity payments are received.¹³ However, if the employee has made nondeductible contributions to the qualified retirement plan, a portion of each annuity payment may be excluded. The exclusion ratio is the cost of the contract (i.e., the employee's contribution) divided by the expected return. To calculate the expected return, the annual payment is multiplied by a factor from the appropriate life actuarial table, which is based on the age and the sex of the person or persons receiving the annuity. The annual annuity payment multiplied by the exclusion ratio determines the portion of the annuity payment which is not taxable (i.e., excludable). The payment in excess of the excludable amount is taxable.¹⁴

Prior to 1987, the taxpayer was able to exclude a portion of the annuity each year regardless of whether the taxpayer's entire cost of the annuity had been previously excluded. However, after December 31, 1986, the total amount that a taxpayer can exclude from the annuity receipts

is limited. The taxpayer can deduct the excludable amount in determining his or her income taxes only up to the point where the taxpayer's cost of the annuity contract (i.e., the employee's nondeductible contribution) has been recovered (excluded from taxable income). After the taxpayer's cost of the annuity has been recovered, the entire annuity receipt is subject to income taxes.¹⁵

But, after December 31, 1986, if the taxpayer dies before his or her entire cost of the annuity has been excluded (unrecovered cost), the amount of the unrecovered cost can be deducted in the taxpayer's last taxable year. For the purpose of the deduction for the unrecovered cost, the deduction is treated as if it were attributable to the taxpayer's trade or business.¹⁶ Therefore, if the unrecovered cost deduction results in a net operating loss for the taxpayer's last taxable year, the amount of the unrecovered cost deduction that cannot be deducted during that year may be carried back three years.

Certain annuities allow for a refund if the annuitant dies before the lapse of a stated time period or before the total guaranteed payment had been distributed (i.e., an annuity with a refund feature). In this situation the cost of the annuity contract has to be reduced by the present value of the refund feature in the determination of the amount of the exclusion ratio. In order to calculate the present value of the refund feature, it is necessary to determine the nearest number of whole years that the payment

is guaranteed (contract cost divided by the annual payment). The nearest number of whole years along with the age and the sex of the recipient of the annuity are used to determine the factor for the refund feature. The lesser of the amount of the contract cost or the amount of the guaranteed payment times the refund factor equals the present value of the refund feature. The adjusted contract cost is the contract cost minus the present value of the refund feature. The expected return is calculated in the same manner as previously discussed. The exclusion ratio is equal to the adjusted contract cost divided by the expected return. The annual annuity payment times the exclusion ratio is the portion of the annuity payment which is excludable. The payment in excess of the excludable amount is taxable.¹⁷

However, prior to July 1986, there was a special tax treatment if the sum of the payments from the employee's annuity for the first three years is greater than the total amount of the nondeductible contributions made by the employee. In this situation the amount of the distribution is not taxed until all of the employee's nondeductible contributions are recovered. After all of the employee's nondeductible contributions are recovered, the remaining amount of the distribution is taxable.¹⁸ But, this special tax treatment is repealed for all annuities which start after June 30, 1986. This repeal results in the annuity receipts being taxed like all other annuities regardless of how quickly the cost is recovered. That is, the receipts are

taxed as they are received and the exclusion for the nondeductible employee contributions is determined by using the exclusion ratio discussed above.

Lump-Sum Distribution--Ten Year Averaging. If the annuity option is not selected, the employee's qualified retirement account balance may be distributed in a lump-sum amount. Unless the employee (surviving spouse) rolls over this lump-sum distribution into an IRA, the entire distribution is taxed in the year that it is received. The amount of the income taxes to be paid may vary depending on whether the employee actively participated in the qualified retirement plan prior to 1974.¹⁹ Prior to 1987, the portion of the employee's account balance which relates to his or her pre-1974 participation qualified for the capital gain treatment. But after 1986 the capital gain treatment provision is repealed. However, there is a five-year phase-out period for the capital gain treatment. If the taxpayer elects, the portion of the pre-1974 contribution which qualifies for the capital gain treatment during the phase-out period is as follows:

Year of Distribution	Phase-Out Percentage
1987	100
1988	95
1989	75
1990	50
1991	25
1992	0

This election, however, may be made by the taxpayer only once.²⁰ For a lump-sum distribution after the election has been made, there will be no capital gain treatment allowed.

The portion of the lump-sum distribution which qualifies for the capital gain treatment is determined by multiplying the total taxable amount by a fraction, the numerator of which is the number of years of pre-1974 active participation, and the denominator of which is the total number of years of active participation.²¹ The total taxable amount is the amount of the total distribution less the following amounts: (1) the employee's contribution,²² (2) the net unrealized appreciation in securities of the employer corporation,²³ and (3) the current actuarial value of any annuity distributed.²⁴ However, after 1986 the taxpayer may elect to the extent provided by the Secretary of the Treasury to include in the total taxable distribution the net unrealized appreciation in securities of the employer corporation.²⁵ The total taxable amount in excess of the capital gain portion is considered to be the ordinary income portion of the lump-sum distribution.²⁶

For income tax purposes after 1986, the income tax on the capital gain portion of the distribution is determined by multiplying the capital gain portion by 20 percent.²⁷ For the tax years prior to 1987, the capital gain portion was taxed only on the amount that exceeded the 60 percent capital gain deduction (i.e., 40 percent of the capital gain portion).²⁸

The ordinary income portion of the lump-sum distribution is required to be taxed at the regular income tax rate unless an averaging method is elected. Before 1987 the averaging method was determined based on a ten-year period, but after 1986 the averaging method is calculated using a five-year period.²⁹ The five-year (ten-year) averaging method is based on one-twentieth (one-tenth) of the excess of the total taxable distribution over a minimum distribution allowance. The tax on the one-twentieth (one-tenth) of the excess amount plus the zero bracket amount applicable to tax years prior to 1987 is determined using the tax rate schedule for single individuals. Then, this amount is multiplied by five (ten) to calculate the tax on the total distribution. In the determination of the tax that relates to the ordinary income portion, the tax on the total amount is multiplied by a fraction, the numerator of which is the number of years of post-1973 active participation, and the denominator of which is the total number of years of active participation. Then, the tax on the ordinary income portion of the distribution is added to the tax on the capital gain portion to determine the total tax to be paid relating to the distribution.³⁰

There is no minimum distribution allowance when the total taxable distribution exceeds \$70,000. But, if the distribution is \$20,000 or less, the minimum distribution allowance is the lesser of \$10,000 or one-half of the distribution. For distributions between \$20,000 and \$70,000,

the minimum distribution allowance is \$10,000 reduced by 20 percent of the amount of the total taxable distribution in excess of \$20,000.³¹

If all the years of active participation in the qualified plan occurred after 1973, the lump-sum distribution does not qualify for the capital gain treatment.³² However, in this case all of the lump-sum distribution does qualify for the five-year (ten-year) averaging election.³³ In addition, even if the employee has pre-1973 active participation in the qualified plan, there may be an election made to treat the entire distribution as ordinary income to be taxed under the five-year (ten-year) averaging method.³⁴

However, an individual who has attained the age of 50 before January 1, 1986 may elect after 1986 to use the ten-year averaging method instead of the five-year averaging method. In determining the tax under the elected ten-year averaging method after 1986, the calculations are to be based on the tax rates in effect for 1986.³⁵

Lump-Sum Distribution--Individual Retirement Account.

If the entire employee's qualified retirement account balance is distributed within one year, the distribution may be rolled over into an IRA by the employee (spouse). The rollover has to be made within 60 days of the distribution.³⁶ The maximum amount which may be rolled over is the fair market value of the property distributed, that is, cash and other assets such as investments in equity securities.

The fair market value of the property distributed is then reduced by the amount of the nondeductible employee contributions.³⁷ The employee nondeductible contribution may be rolled over into an IRA, but the rollover has to be treated as a regular payment to the IRA and may be subject to an excess payment tax on part or all of the employee nondeductible contribution rollover.

"Employee contributions" do not include voluntary deductible employee contributions. Deductible employee contributions are defined as any qualified voluntary employee contributions made after December 31, 1981, which are allowable as a deduction under Sec. 219(a).³⁸ The voluntary deductible employee contribution portion of a qualified lump-sum distribution can be rolled over into an IRA tax free if made within 60 days of the distribution.³⁹ Previous to 1982 no voluntary deductible employee contributions were allowed as deductions from the employee's gross income.

Distributions from an IRA are included in taxable income in the years in which the payments are received. The five-year (ten-year) averaging method cannot be used for distributions from IRAs. However, for distributions from IRAs prior to 1987, the income averaging method could have been elected, but after 1986 the distributions from IRAs are taxed at the regular income tax rate since the regular income averaging method has been repealed.

The purpose of income averaging (repealed after 1986) is to offer tax savings to taxpayers with either widely

fluctuating income or sharp jumps in real income. However, since 1970 more and more taxpayers qualified for income averaging merely because of the increased rate of inflation. This problem has intensified with the addition of indexing. Therefore, certain taxpayers may be receiving a double benefit as a result of indexing and income averaging. It is the intent of Congress to eliminate this double benefit received by many taxpayers. It was felt that increasing from 120 percent to 140 percent⁴⁰ in defining averageable income and changing the base period for income averaging from four to three years⁴¹ will result in making income averaging available only to taxpayers with an unusual increase in income (H. Rep. No. 98-432, Part 2 [March 5, 1984], p. 1835).

Partial Distribution. After July 18, 1984, partial distributions, that is, distributions from a qualified retirement plan which are at least equal to 50 percent of the employee's account balance, may be rolled over by the employee (surviving spouse) into an IRA.⁴² In contrast, prior to July 18, 1984, any partial distribution from a qualified pension plan was not eligible for a tax-free rollover regardless of how large a percentage of the pension account balance was distributed. Congress felt that the prior law was too harsh in the situation in which the partial distribution was at least equal to a 50 percent distribution from a qualified plan. However, to prevent abuses of the partial distribution rollover rules, Congress

found it necessary to disallow the favorable ten-year income averaging method and the capital gain treatment on subsequent distributions from the qualified plan (H. Rep. No. 98-432 [October 21, 1983], p. 273). Thus, the remaining balance is taxed as ordinary income, but the distribution may qualify for the regular income averaging method.⁴³ However, it should be recalled that after 1986 the regular income averaging method has been eliminated.

Another requirement of the partial roll over into an IRA is that this distribution cannot be one of a series of periodic payments. But, this requirement has been eliminated for all partial distributions after 1986. However, at a later date, it is possible for the employee (surviving spouse) to distribute the remaining balance either as a lump-sum distribution or as an annuity.

A further requirement of a partial distribution is that the distribution cannot be a qualified total distribution. A qualified total distribution is either a terminal lump-sum distribution or it may involve a distribution which consists solely of accumulated deductible employee contributions.⁴⁴

In order for a partial distribution to qualify for a tax-free rollover, the distribution must be rolled over within 60 days from the distribution date.⁴⁵ However, the maximum amount rolled over cannot be greater than that portion of the distribution which is normally included in gross income.⁴⁶ In addition, no portion of the partial

distribution may later be rolled over into another qualified retirement plan or a tax-sheltered annuity.

Excess Distribution. There is a 15 percent tax levied on any "excess distributions" made after December 31, 1986. An "excess distribution" refers to the situation in which the aggregate amount of the retirement distributions during a tax year exceeds \$112,500 (indexed for inflation). However, the following distributions for the purpose of the excess distribution calculation are excluded from the aggregate amount of the retirement distributions: (1) distributions with respect to the taxpayer made after the death of that taxpayer (this distribution is subject to estate taxes discussed below), (2) distributions payable to another individual pursuant to a qualified domestic relations order (the person receiving the payment is taxed), (3) distributions attributable to the nondeductible employee's contributions to the retirement plan and (4) distributions that are rolled over to an IRA.⁴⁷

However, if the taxpayer elects income averaging for a lump-sum distribution, the amount of the limitation is increased to \$562,500.⁴⁸ There previously has been no additional income taxes on excess distributions from qualified retirement plans or IRAs.

Estate Tax Treatment

If a taxpayer dies after 1986, the decedent's estate may be subject to an additional 15 percent tax levied on any

"excess retirement accumulation." For the purpose of levying the "excess retirement accumulation" tax, no credit (e.g., unified credit) will be allowed. The term "excess retirement accumulation" refers to the amount that the value of the decedent's interest in qualified employer plans and individual retirement plans at the date of the decedent's death exceeds the present value of a term certain annuity which has annual annuity receipts of \$112,500 (indexed) payable for a period that is equal to the life expectancy of the taxpayer immediately prior to his or her death.⁴⁹ Before 1987 there has been no provision for an additional estate tax on "excess retirement accumulation."

For estates of decedents who have died after 1984, the value of the annuity or other payments received by any beneficiary by reason of surviving the decedent is included in the decedent's gross estate.⁵⁰ This includes the value of payments from a qualified retirement plan or from an IRA account. Only the portion of the value that relates to the decedent's contributions to the qualified plan or an IRA has to be included in the decedent's gross estate. But, for this purpose any contribution made by the decedent's employer or former employer because of the decedent's employment is considered as being made by the decedent.⁵¹

The Joint Committee on Taxation stated three reasons for inclusion of all pension distributions in gross estates. They are: (1) the \$100,000 exclusion results in complex allocation problems in calculating the portion of the

retirement distribution that is excluded from the gross estate; (2) the estate tax exclusion is unnecessary as these distributions are eligible for the unlimited marital deduction and the unified credit; and (3) it is inappropriate to have an estate tax exclusion based on the source of the asset (JCS-41-84 [December 31, 1984], p. 824).

However, for the estates of decedents who have died in 1983 and 1984, a portion of the value of the annuity or other payments may be excluded from the decedent's gross estate.⁵² The amount that may be excluded from the decedent's gross estate for 1983 and 1984 was limited to \$100,000. Therefore, any qualified retirement plan distribution which occurred in 1983 and 1984 in excess of \$100,000 had to be included in the decedent's gross estate. Only the portion of the value of the qualified plan or an IRA that was contributed by the employer or that was a deductible employee contribution may be excluded from the decedent's gross estate. This means that the portion of the value of the qualified plan or an IRA that relates to the decedent's nondeductible contributions must be included in the decedent's gross estate.

Furthermore, if either the ten-year averaging method or the capital gain treatment was elected by the beneficiary of the qualified retirement plan during 1983 and 1984, the amount received from a lump-sum distribution could not be excluded from the decedent's gross estate. Thus, the \$100,000 exclusion could be used only if the ten-year

averaging method or the capital gain treatment was not elected.⁵³

In 1982 Congress desired to place limitations on contributions and benefits of pensions to prevent excessive accumulation of tax-deferred funds by high income persons. One of the benefits of pension plans that was of interest to Congress was the unlimited exclusion from gross estates for annuities and lump-sum distributions from qualified retirement plans. In order to reduce the accumulation of funds transferred estate tax free to future generations, Congress established a maximum exclusion from the decedent's gross estate of \$100,000 for annuities and lump-sum distributions from qualified retirement plans (S. Conf. Rep. No. 97-530 [August 17, 1982], p. 618).

Prior to 1983 there was an unlimited exclusion for the portion of the value of a qualified retirement plan or an IRA that relates to the employer's or decedent's deductible contributions to that plan. However, the decedent's nondeductible share of the contributions to the qualified retirement plan was required to be included in his or her gross estate. In addition, the distribution from a qualified retirement plan could be excluded only if the beneficiary or beneficiaries did not elect either the ten-year averaging method or the capital gain treatment.⁵⁴

Before 1985 distributions from an otherwise tax exempt annuity to the decedent's executor could not be excluded from the decedent's gross estate. In this case, the estate

was considered as the beneficiary and therefore the value of the annuity had to be included in the decedent's gross estate.⁵⁵

Previous to 1982 the marital deduction which the surviving spouse may elect for estate tax purposes was limited to the greater of \$250,000 or 50 percent of the adjusted gross estate of the decedent. The \$250,000 marital deduction allowed a portion of the decedent's estate to be transferred immediately to the spouse without being taxed in his or her estate. However, many farmers and small business owners found that the \$250,000 marital deduction was not sufficient, and thus, many of these businesses had to be sold to pay the estate taxes even though the property was transferred to the surviving spouse. In addition, if all the property was transferred to the surviving spouse, the amount in excess of the marital deduction would be included in the decedent's estate, and then, the entire value of the property upon the surviving spouse's death would be included in his or her estate. Thus, the effective estate tax rate was almost one and one-half times the rate which the estate would be taxed if transfer was made to a nonspousal beneficiary upon the decedent's death (H. Rep. No. 97-201 [July 24, 1981], p. 159-160). An unlimited marital deduction was enacted for the years after 1982 to prevent taxing an estate excessively in the situation in which the estate is first bequeathed to the surviving spouse.

Literature Review

This literature review is composed of three main sections. First, a review of the literature is presented regarding the important factors which the employee should consider in the selection of the type of retirement plan in which to participate (e.g., tax-sheltered or nontax-sheltered retirement plans). Secondly, articles are reviewed which cover factors to be considered in making retirement plan distribution decisions. Finally, articles are examined which investigate estate and income tax factors to be evaluated in planning for retirement.

Important Factors In Making Retirement

Plan Selections

Several articles discussed various types of retirement plans. For example, Hickman (1974) briefly compared the pension and profit-sharing plans available. Allen (1983) discussed the benefits of private pension plans as compared to social security benefits. Mummy and Manson (1983) examined the implications to social security and company pension plans of the availability of the Individual Retirement Account (IRA).

The retirement literature also makes some reference to factors to be considered when deciding which plan to use in planning for retirement. Collins (1978) briefly cited the tax advantages of the IRA as compared to other investments as follows: (1) interest earned is not taxed

until distributed and (2) there is a potential increase in the amount of interest accumulated over the life of the plan because of the compounding effect of the tax-free interest.

In contrast, Mano, Deppe and Jenne (1984) examined some of the potential disadvantages of IRAs. They suggested that the following factors should be considered before establishing an IRA: (1) ten percent early withdrawal penalty, (2) earnings are taxed at ordinary income tax rates, (3) loss of the \$100,000 estate tax exclusion under the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA), (4) loss of ten-year averaging, and (5) potential higher tax bracket upon retirement.

Hira (1984) presented the code requirements, the regulation requirements, and letter rulings pertaining to rollovers of IRAs after enactment of TEFRA. Specifically, he discussed the reasons for rollover conversions to IRAs, the distributions which qualify for rollovers to IRAs, and the methods of distribution from IRAs.

Mehr (1968) listed variables to be considered by employees in the decision whether to participate in tax sheltered annuities. These variables include (1) the net taxable income of the employee, (2) the marital status of the employee, (3) the income tax rate schedule in effect, (4) the net rate of return expected to be earned by the employee, and (5) the net rate of return earned on the post-tax savings anticipated by the employee. Even though Mehr mentioned

estate and gift tax advantages available in 1968, his primary emphasis was on how much to invest and whether fixed or variable annuities should be used.

Healy (1981) compared regular savings plans with tax deferred savings plans for employees of nonprofit organizations. He concluded that qualified employees should take advantage of the tax deferred savings plans. Healy briefly discussed the IRA's rollover provisions and the fact that if an employee dies before retirement, the amount paid to his or her beneficiary will be received without the necessity of going through probate. However, these features were not considered in his model.

Todd (1978) and Morehart and Trennepohl (1979) examined the nontax-sheltered plan versus the tax-sheltered plan. Morehart and Trennepohl found that the rate of return on investment is the most significant factor in determining whether the nontax-sheltered plan or the tax-sheltered plan is the best retirement investment. Todd concluded that the tax-sheltered annuity is the best investment for retirement.

In another research paper, Gahin (1983) examined the financial feasibility of tax-sheltered individual retirement plans by introducing a cash flow model which measured the net cash flow for an investor using the following variables: (1) a designated age, (2) opportunity net rate of return after tax, and (3) marginal tax rates before and after retirement. Gahin evaluated the Tax Sheltered Annuity (TSA) and the Tax Investment (TI) plans only under the assumption

that a straight life annuity is used at retirement. He found for fund accumulation purposes that the TSA is a better investment than the TI.

Dorfman and Adelman (1983) compared the accumulation and liquidation of wealth using (1) the tax deferred annuity (TDA) for investment purposes and the TDA for liquidation purposes and (2) the non-TDA for investment purposes and the non-TDA for liquidation purposes. They concluded that the TDA investment and liquidation approach dominates the non-TDA approach.

Burgess and Madeo (1980) also examined the tax-sheltered plans and the nontax-sheltered plans. Their model was based on the assumption that the taxpayer's income increased by some percentage each year. Another assumption stipulated that the taxpayer was in the 50 percent tax bracket. The parameters included the rate of return on the invested funds, the initial level of income of the taxpayer, and the growth rate in income. Instead of the assumption of an annuity purchased at retirement as is used in other research, the taxpayer was assumed to withdraw the entire fund at the age of 59 1/2 and to have taken advantage of the ten-year forward averaging technique. Burgess and Madeo found that the tax-sheltered plans are advantageous not only because of the deferred tax feature, but also because of the tax advantages available at retirement.

Kulsrud (1982) compared the investment alternatives of the IRA and the nontax-sheltered plans. Specifically, he

included in his model the interest earned on the portion of the income taxes saved as a result of the investment in an IRA. Kulsrud concluded that the IRA is a better retirement investment than the nontax-sheltered plans.

Crumbley, Apostolou and Kilpatrick (1986) examined the following legal requirements for various retirement plan alternatives (e.g., Keogh plans, IRAs, Sec. 401(k) plans, and Simplified Employee Purchases [SEP] plans): (1) the persons who are eligible, (2) the amount that can be contributed, (3) the deductible restrictions on the employer(ee), and (4) the withdrawals before the age of 59 1/2, before death and post death. They also illustrated the amount that will accumulate in the IRA over 10, 20, 30, and 40 years if the rate of return on the IRA is 10, 12, and 15 percent.

These research papers have discussed factors affecting investment accumulation for either retirement or pre-retirement purposes. However, the articles did not consider the factors related to distribution alternatives at either retirement or death.

Factors In Making Retirement Plan

Distribution Decisions

Several articles compared the tax consequences of the alternative methods of distribution from qualified plans at retirement. Lipka and Goodman (1983) examined the tax effect of a lump-sum distribution using the regular tax rate, the five-year averaging method, and the ten-year

averaging method. The potential alternative minimum tax was also examined. Their analysis was based only on lump-sum distributions which were subject to the capital gain treatment (i.e., pre-1974 contributions). In most cases the ten-year averaging method resulted in less tax, but there were situations in which the regular tax rate or the regular averaging method should be selected. These researchers indicated that the alternative minimum tax is applicable most frequently with the regular averaging method, but also is applicable in certain situations for the ten-year averaging method.

Auster (1983a) compared the rollover option to the lump-sum distribution option. He recommended that a distributee should use the lump-sum distribution option if the tax on this distribution is less than the present value of the expected future tax on the IRA distribution. Auster found that the higher the discount rate and/or the longer the time period, the more advantageous the roll over to an IRA becomes and the less relevant is the potential increase in the tax brackets.

The lump-sum distribution method and the periodic annuity option were evaluated by Alden (1984). The analysis was based on the final pay ranging from \$50,000 to \$300,000. The tax on the lump-sum distribution was determined based on the assumption that two thirds of the distribution qualified for the capital gain tax rate and one third of the distribution used the ten-year averaging method.

Alden concluded that the results are highly sensitive to the assumptions made. He indicated that the lower the interest rate the more favorable the lump-sum option becomes.

Hoyt (1984) compared the ten-year averaging method with the rollover method of handling a lump-sum distribution from a qualified retirement plan. His comparison used the following factors: (1) the amount of the distribution, (2) the marginal tax bracket during retirement, and (3) the expected distribution period. Hoyt's analysis indicated that the smaller the distribution and the higher the tax bracket during retirement the more desirable is the ten-year averaging method.

Lassila and Putnam (1984) discussed an annuity, ten-year averaging, and rollover methods of distribution from a qualified plan at retirement. In their analysis consideration was given to various interest rates, marginal income tax rates, and the employee's account balance at retirement. Lassila and Putnam found that

the ideal candidate for 10-year averaging would (1) have a relatively low balance in his retirement account, (2) have a high marginal income tax rate anticipated during relatively few retirement years, and (3) be able to earn a before-tax rate of return on the investment of the 10-year averaging lump sum that is at least as high as the rates that can be earned using the other alternatives.⁵⁶

Laibstain and Lander (1984), Campbell (1984), and Adams, Herpe and Bieber (1984) discussed the changes in the required distribution between TEFRA and the Deficit Reduction Act of 1984 (DRA). In addition, Laibstain and Lander explained the 50 percent rollover distribution option and

the tax treatment if 85 percent of the total contribution to a qualified retirement plan is derived from the employee.

Folz (1986a) compared the averaging income tax rate (using the ten-year averaging method) to the marginal income tax rate for various distributions ranging from \$100,000 to \$1,000,000. He also illustrated the amount of IRA growth and the amount of required distributions in the age range 62 years to 88 years assuming (1) both spouses were 62 years old when the retirement plan of \$200,000 was rolled over into an IRA, (2) there was a 12 percent earnings rate, (3) there were annual redeterminations of the life expectancy, and (4) only required distributions were made during this period.

Wittenbach and Gallagher (1986) expounded on the legal requirements related to contributions to IRAs (e.g., limits and deadlines) and distributions from IRAs (e.g., penalty for premature distributions, insufficient distributions and taxfree rollovers). They also discussed the advantages and disadvantages of rolling a qualified retirement plan to an IRA rather than taking a lump-sum distribution.

Marcuson (1986) presented a legal discussion of the types of distributions available from a qualified plan (e.g., lump-sum distribution, plan termination, partial distributions, and roll over to an IRA), the income tax consequences of employee contributions (e.g., nondeductible and deductible), and the form of distributions (e.g., cash, other property, and employer securities).

In summary, Lipka and Goodman considered only the capital gain treatment, while Hoyt and Lassila and Putnam ignored the potential capital gain treatment entirely. Alden examined only one capital gain/ten-year averaging ratio in his analysis. None of these articles considered in their illustrations employee contributions to the qualified retirement plan. In addition, these articles did not analyze the potential effects that estate planning could have on the retirement distribution decisions.

Estate And Income Tax Planning For Retirement Benefits

Several articles have investigated the income and estate tax consequences of the alternative methods of distribution from a qualified plan at death. Adams (1982) cited the code under the Economic Recovery Tax Act of 1981 (ERTA), the regulation requirements, and a few court decisions pertaining to the following topics: installment payments, lump-sum distributions, estate and gift tax provisions, life insurance under qualified plans, tax-deferred annuities, and rollovers.

Toy's (1971) study involved decision theory. He utilized three individuals in his research to examine the decision making process when selecting the appropriate retirement option from the Harvard University Retirement Plan. The following parameters were included in the computer model utilized by the three individuals: (1) uncertainty

about longevity, (2) consumption level, (3) uncertainty of investment returns, (4) desired remaining estate, (5) regular income tax rates, and (6) the estate tax rates in effect at the time of the study. With only three individuals participating in the study, Toy was not able to measure the utility of consumption in the retirement period. The participants found that the exercise gave them a better understanding of the problems facing retired persons.

Krass (1983), Adams and Bieber (1983), Campbell (1983), Martin (1984), and Rinaldi-Sander, Gallagher and Sherry (1983) explained the code changes between ERTA and TEFRA. These articles considered only the legal aspects of the code changes.

Several tax planning considerations related to TEFRA were discussed in Adams and Hodgman (1983). Specifically, these authors stated that

(1) the spouse's income tax bracket, (2) the non-spouse beneficiaries' income tax brackets, (3) the spouse's estate tax bracket, (4) the taxable and tax-exempt investment yields and (5) the period the spouse will survive the employee⁵⁷

are important variables in estate planning for qualified retirement plans. Adams and Hodgman compared the ten-year averaging method with the roll over to an IRA option for spouses in the 50 percent income and estate tax brackets over periods of ten and twenty years assuming distributions of \$500,000 and \$400,000. They concluded that the longer the life expectancy of the spouse the more desirable the rollover option becomes. Also, the authors concluded that

the smaller the distribution the more desirable the ten-year averaging method becomes.

In determining which qualified plan distribution alternative would result in a maximum after-tax terminal value, Auster (1983b) compared the ten-year averaging method with the IRA rollover option. If an estate tax is due and the beneficiary is the spouse, Auster indicated that the alternative to be selected depended on the income tax bracket of the spouse. For nonspousal beneficiaries when an estate tax is due, Auster concluded that the larger the distribution the less likely the ten-year averaging method should be chosen.

The change in estate strategies after the enactment of TEFRA was discussed by Levin (1984). In addition to a discussion on the use of trusts for estate planning, Levin compared the income tax implications of the IRA rollover option and the ten-year averaging method for a distribution of \$500,000 to the surviving spouse. In this situation the IRA rollover is more favorable than the ten-year averaging option.

The present value of after-tax distributions was used by Ashby (1984) in a comparison of an annuity and the ten-year averaging option. He found that for a \$100,000 noncontributory qualified plan, the present value of the ten-year averaging method was greater than the present value of a 15-year annuity.

Estate planning for qualified retirement plan distributions under TEFRA was discussed by Sacher (1983). He found that the following economic factors are important considerations in estate planning for qualified retirement plan distributions:

estate taxes payable by the participant's estate,
estate taxes potentially payable by the beneficiary's
estate, income taxes payable in connection with the
distribution, the retention of tax-free accumulation,
the benefit of deferral of the payment of taxes and
present value⁵⁸

In analyzing the decision to pay taxes currently or to postpone payments of taxes, Sacher computed the present value of the difference between the amounts of the two tax payment alternatives. He then compared the resulting present value calculation to the amount of interest that could be received by investing the deferred taxes. Sacher's example indicated that an investment for as little as three and one-half months at nine percent interest would more than cover the present value of the difference between the two tax payment alternatives plus the additional estate taxes to be paid on the interest earned.

A simulation model was used by Schnee and Wiehrs (1984) to evaluate the optimal use of the marital deduction in estate planning under TEFRA. The optimal decision was based on the maximum amount received by the beneficiary from the estates of the decedent and the spouse at the time of the spouse's death. The parameters examined included the size of the decedent's estate, the size of the spouse's

estate, the after-tax rate of return of the spouse, the spouse's remaining life, the amount transferred to the spouse, and the consumption needs of the spouse. Schnee and Wiehrs concluded that when the spouse needs a percentage of the earnings of the decedent's estate for consumption purposes, a decedent's estate transfer becomes more favorable as the spouse's remaining life increases and the disparity between the two estate sizes widens.

Blattmachr (1984), Johnson (1984), and Esterces (1985) presented the estate and gift tax changes under the Tax Reform Act of 1984 (TRA). Esterces suggested that a lump-sum distribution should be used if the estate was small or if other assets were available to take advantage of a credit sheltered trust. He implied that the spouse's economic circumstances determine whether the distribution should be rolled over to an IRA or be retained by the spouse. Esterces felt that it might be advisable to roll over the distribution if the surviving spouse is close to the age of 70 1/2.

Langstraat (1986) discussed methods that will result in a maximum deferral of distributions from IRAs for taxpayers who have sufficient current income without considering the earnings from their IRA (i.e., a goal of minimizing the distributions from the IRA). The annual annuity receipts were presented for an IRA with a \$500,000 balance under the following distribution options: (1) a single life annuity, (2) a joint and survivor annuity with

the spouse, (3) a joint and survivor annuity with a child [age 45], and (4) a joint and survivor annuity with a grandchild [age 17]. There was also a brief discussion which indicated that if the IRA balance is transferred to the spouse it is not included in the taxpayer's estate, but the IRA balance is included in the taxpayer's estate if the IRA is transferred to a nonspousal beneficiary. However, the potential effect of the actual estate taxes paid on the amount that is eventually bequeathed to the beneficiary is never quantified.

Folz (1986b) also mentioned the estate tax consequences if the IRA is not bequeathed to the spouse. In addition, he discussed the required distribution date and the distribution period if the post-death distribution is made to the spouse (e.g., younger or older than the age of 70 1/2) or to a nonspousal beneficiary.

In summary, several of these articles illustrated only one or two potential tax consequences of a qualified retirement plan upon the employee's death. None of the models considered the potential tax effects of employee contributions to the qualified plan. Schnee and Wiehrs did not consider the income tax consequences involved if a qualified retirement plan had been included as part of the estate. Other than Toy and Schnee and Wiehrs the articles ignored the spouse's potential consumption needs pertaining to the retirement income.

In addition to the variables (e.g., income tax bracket, life expectancy, interest rate, estate tax

bracket, and marital deduction) cited in the above articles, this research will examine various proportionate amounts of employee contributions. Another variable of this research will be the percentage of the employer's pre-1974 contributions in relation to the total employer's contributions to the qualified plan.

As can be observed in Table III, most of the studies discussed above examined only a few parameters at a time. In contrast, this research study, as shown in Table III, will investigate the combined effects of many simultaneous variables.

TABLE III
CLASSIFICATION OF PERTINENT TAX LITERATURE
RETIREMENT DISTRIBUTION

	Lang- straat (1986)	Levin (1984)	Adams and Hodg- man (1983)	Sacher (1983)	Auster (1982) (b)	Adams (1982)	Auster (1982) (a)	Folz (1986) (a)	Lassila and Putnam (1984)	Alden (1984)	Hoyt (1984) (1983)	Lipka and Good- man (1983)	Proposed Research Study
	(3)	(2)	(2)	(2)	(2)	(1)	(2)	(3)	(2)	(2)	(2)	(2)	
<u>DISTRIBUTIONAL AND TAX FACTORS:</u>													
Lump Sum--10 Year Averaging		I	I			I	I		S	S	S	S	S
Lump Sum--Capital Gain													S
Lump Sum--Regular Averaging												S	S
IRA Rollover		I	I	I	I	I	I	I	S		S		S
Annuity	I		I						S				S
<u>VARIABLES:</u>													
Income Tax Bracket		I	I		I	I	I				S	S	S
Estate Tax Bracket		I	I	I/PV	I								S
Taxable Interest Rate		I	I		I	I	I	I	S	S	S		S
Nontaxable Inter- est Rate		I	I	I/PV	I	I	I		S		S		S
Life Expectancy	I		I								S		S
\$100,000 Tax Ex- clusion		I	I	I/PV	I								
Marital Deduction		I	I	I/PV									S
Unified Credit													S
Consumption Needed													S
Employee Contri- butions						I				S			S
Pre-1974 Participa- tion													S

S = Simulation
I = Illustration
PV = Present value

(1) = ERTA
(2) = TEFRA
(3) = TRA

ENDNOTES

- ¹Sec. 401(a)(9).
- ²Sec. 401(a)(9)(D).
- ³Sec. 72(s).
- ⁴Sec. 72(s).
- ⁵Sec. 401(a)(9).
- ⁶Sec. 401(a)(9)(iv)(II), Conference agreement on Sec. 521(a)(1) P.L. 98-369.
- ⁷Sec. 401(a)(9)(iv).
- ⁸Sec. 401(a)(9).
- ⁹Sec. 402(a)(7).
- ¹⁰Conf. Bill Sec. 1121(b).
- ¹¹Sec. 401(a)(9)(iv) (I), Conference agreement on Sec. 521(a)(1) P.L. 98-369.
- ¹²Sec. 408(a)(6), Conference agreement on Sec. 521(b)(1) P.L. 98-369.
- ¹³Sec. 403 (a), Reg. Sec. 1.403(a)-1.
- ¹⁴Sec. 72(b), Reg. Sec. 1.72-4, Reg. Sec. 1.72-5, Sec. 72(c)(3)(A), and Reg. Sec. 1.72-9.
- ¹⁵Conf. Bill Sec. 1122(b)(2).
- ¹⁶Conf. Bill Sec. 1122(b)(3).
- ¹⁷Sec. 72(b). Reg. Sec. 1.72-7(b).
- ¹⁸Sec. 72(d)(1) and (2).
- ¹⁹Sec. 402(a)(2).
- ²⁰Conf. Bill Sec. 1122(h)(4).
- ²¹Sec. 402(a)(2).

- 22Sec. 402(e)(4)(D)(i).
- 23Sec. 402(e)(4)(D)(ii).
- 24Sec. 402(e)(4)(B).
- 25Conf. Bill Sec. 1122(g).
- 26Sec. 402(e)(4)(E).
- 27Conf. Bill Sec. 1122(h)(3)(B).
- 28Sec. 1202(a).
- 29Conf. Bill Sec. 1122(a)(2).
- 30Sec. 402(e)(1)(A), (B), and (C).
- 31Sec. 402(e)(1)(D).
- 32Sec. 402(a)(2).
- 33Sec. 402(e).
- 34Sec. 402(e)(4)(L).
- 35Conf. Bill Sec. 1122(h)(5).
- 36Sec. 402(a)(7), Sec. 402(a)(5)(A) and Sec.
402(a)(5)(c).
- 37Sec. 402(a)(5)(B).
- 38Sec. 72(o)(5).
- 39Sec. 72(o)(1).
- 40Sec. 1302(a)(1).
- 41Sec. 1302(b)(1).
- 42Sec. 402(a)(7), Sec. 402(a)(5)(D).
- 43Sec. 402(a)(5)(D)(iii).
- 44Sec. 402(a)(5)(E).
- 45Sec. 402(a)(5)(c) and Sec. 402(a)(5)(A).
- 46Sec. 402(a)(5)(B).
- 471986 IRC Sec. 4981A(a), (b).
- 481986 IRC Sec. 4981A(c)(4)(B).

491986 IRC Sec. 4981A(d).

50Sec. 2039 (a).

51Sec. 2039(b).

52Sec. 2039(c).

53Sec. 2039(g) added by Sec. 245(a), P. L. 97-248, effective after December 31, 1982 and Sec. 2039(f).

54Sec. 2039(c), (e), (f)(2).

55Reg. Sec. 20.2039-2(b).

56Dennis R. Lassila and Karl B. Putnam, "Choosing the Appropriate Form of Retirement Income From a Qualified Plan," Taxes--The Tax Magazine (July 1984), p. 442.

57Roy M. Adams and David R. Hodgman, "Estate and Income Tax Planning for Qualified Retirement Benefits," Trusts & Estates (August 1983), p. 44.

58Charles P. Sacher, "Planning for Qualified Plan Distributions After the \$100,000 Exclusion Limit in 2039," The Journal of Taxation (January 1983), p. 20.

CHAPTER III

METHODOLOGY

The dual objectives of this study are (1) to develop decision guidelines in selecting qualified retirement plan distribution options for taxpayers with varying profiles and retirement plan characteristics and (2) to evaluate the impact of recent income and estate tax legislation on these decision guidelines. Ideally, the analysis of recently enacted tax provisions should be based on actual family situations and estate goals, but it is difficult to obtain reliable family income and estate planning data.

However, recent tax research has utilized the simulation technique in analyzing estate and retirement plan alternatives. For example, Burgess and Madeo (1980) used simulation to investigate the effectiveness of asset accumulation for tax-sheltered and nontax-sheltered plans. Schnee and Wiehrs (1984) utilized a simulation model to evaluate the optimal marital deduction to be elected under TEFRA. Lipka and Goodman (1983), Alden (1984), Hoyt (1984), and Lassila and Putnam (1984) employed simulation to compare the income tax results of the qualified retirement plan distribution options available under TEFRA.

In this study a deterministic simulation model is employed to examine the impact of the tax provisions which were in effect for the 1985 tax year and the Tax Reform Act of 1986 (TRA-1986) provisions on the selection of qualified retirement plan distribution methods. The simulation models used in this research (See Appendixes A, B, C, and D) incorporate three classes of variables: (1) the decision variables, (2) the taxpayer variables, and (3) the plan variables (See Table IV).

Decision Variables

Distribution Options

There are several distribution options available to the taxpayer. The distribution options that are investigated include: (1) joint annuity with spouse, (2) lump-sum distribution with the election by the taxpayer to pay income taxes immediately, (3) lump-sum distribution with the election by the taxpayer to roll over the entire amount to an IRA, (4) lump-sum distribution with the election by the surviving spouse to roll over the entire amount to an IRA, and (5) annuity elected by the surviving spouse.

However, several of these distribution options are viable only under alternative conditions. For example, the option to elect to roll over into an IRA applies only if the taxpayer (spouse) elects a distribution prior to the age of 70 1/2. In addition, the election of the surviving spouse to either roll over a lump-sum distribution into an

TABLE IV
TAXPAYER PROFILES AND RETIREMENT
PLAN CHARACTERISTICS

<u>Decision Variables</u>	<u>Taxpayer Variables</u>				<u>Plan Variables</u>			<u>Tax Law</u>
	Age At Distri- bution	Life Expec- tancy Of Taxpayer	Life Expec- tancy Of Spouse	Taxpayer Profile ¹	Assets Of Spouse	Pre-1974 Contribution	Employee's Contribu- tion To Plan	Applicable Laws
Joint annuity with spouse	65	2	2	Low	0%	0%	0%	1985
a. 100% annuity payment to surviving spouse	70 1/2	10	10	Middle	50%	25%	12%	TRA-1986
b. 50% annuity payment to surviving spouse		20	20	High				
Lump-sum distribution—taxes paid immediately								
Lump-sum rollover to an IRA by taxpayer ³								
Lump-sum rollover to an IRA by spouse ²								
Annuity elected by spouse ²								

¹TAXPAYER PROFILES:

	<u>Low</u>	<u>Middle</u>	<u>High</u>
Income tax bracket (1985)	15%	25%	50%
Income tax bracket (TRA-1986)	15%	15-25%	31%
Other assets	\$50,000	\$150,000	\$2,000,000
Percentage of retirement income consumed annually	100%	75%	20%
Annual earnings rate	6%	8%	9%
Amount of plan benefits (fund balance)	\$70,000	\$140,000	\$275,000
Estate tax	Computed ⁴	Computed ⁴	Computed ⁴

²This applies only if the taxpayer elects distribution at the age of 70 1/2, then dies before attaining that age, and the spouse has not reached the age of 70 1/2.

³This applies only if the taxpayer elects distribution at the age of 65.

⁴The estate tax liability will be a function of the other variables.

IRA or to receive annuity payments can be made only if the taxpayer elects distribution to be made at the age of 70 1/2, then dies before attaining that age, and the surviving spouse has not reached the age of 70 1/2.

Age Of The Employee At Distribution

An employee at the age of 65 can receive distributions from his or her qualified retirement account without a reduction in the amount to be received because of early retirement. In order to eliminate the complexity involved with reduced payments as a result of early retirement, distributions prior to the age of 65 will not be included in this study.

However, an employee at the age of 65 is not required to begin distribution immediately. A required qualified retirement distribution does not have to commence until the employee reaches the age of 70 1/2. In order to allow for the option to postpone distribution until a later date, the latest distribution date at the age of 70 1/2 will be examined in this research study.

Joint Annuity Variables

In addition to the ages of the employee and the spouse, the portion of the annuity payments which is to be paid to the surviving spouse after the employee's death (i.e., 100 and 50 percent) also affects the annuity payments to be received by the annuitant. The greater the percentage

paid to the surviving spouse, the higher is the reduction in the annuity payments received at retirement. Since the annuity receipts net of income taxes will vary depending on the surviving spouse benefits to be received, the portion of the receipts to be paid to the surviving spouse after the employee's death will be considered in this research.

Under the Employee Retirement Income Security Act of 1974 (ERISA), unless otherwise elected by the employee at retirement the surviving spouse must receive an annuity payment equal to at least 50 percent of the pension paid to the retiree. The Bureau of Labor Statistics in Employee Benefits in Medium and Large Firms, 1981 [1982] indicated that approximately 68 percent of the plans provided for multiple joint-and-survivor options. One of the options available allows the surviving spouse to continue to receive 100 percent of the annual annuity receipts that had been paid to the retiree. Therefore, both the 50 percent and 100 percent survivor benefits will be investigated as related to the joint-and-survivor annuity.

Taxpayer Variables

In the development of the taxpayer variables for the simulation model, several retirement and estate goal factors that an individual would use to evaluate the distribution option choice are considered.

Life Expectancy Of The Employee And

Spouse

At the time that the decision has to be made regarding the type of distribution desired, the remaining life expectancies of the employee and the spouse are unknown. The uncertainty regarding the life expectancy of the employee and the spouse influences the distribution option selected. Life expectancy is also a factor that has to be considered when the employee decides whether to elect distribution at the age of 65 or to delay distribution until he or she attains the age of 70 1/2. For these reasons, various assumed life expectancies for the taxpayer (employee) and his or her spouse are to be investigated in this study.

As can be seen in Table IV, the life expectancies of the taxpayer and the spouse to be examined are two years, ten years and twenty years. The two year life expectancy was selected in order to consider two additional distribution options. In order to investigate the option to elect a lump-sum roll over to an IRA by the spouse and the option to select an annuity by the spouse, the taxpayer at the age of 65 would have to elect distribution to be made at the age of 70 1/2 and die before attaining that age. Thus, these options can be investigated only if the taxpayer lives for a few years after obtaining the age of 65 (for example, two years).

According to the Statistical Abstract of the United States: 1985 [1984], the average life expectancy is close to

75 with a life expectancy for a male being about 71. The life expectancy for a female is a little over 78. By adding ten years to 65, the age obtained (75) is close to the average life expectancy. For this reason, a ten-year life expectancy is investigated in this research for both the taxpayer and the surviving spouse.

Since many individuals live longer than the normal life expectancy, a life expectancy which is longer than ten years should be investigated. The individual's expected life would become 85 ($65 + 20$) if 20 years were used. Since 85 exceeds the normal life expectancy for both the male and the female, the life expectancy of 20 years will also be included in this study.

The possible combinations of the expected lives of the taxpayer and the spouse allow the researcher to examine some realistic life expectancies for couples. In certain cases the spouses may die simultaneously or within a few months of each other. The combinations of 2-2, 10-10, and 20-20 allow for these possibilities. However, for other couples one spouse may die a long time prior to the death of the other spouse. The combinations for example 2-10, 2-20, or 10-20 can reasonably represent this situation. In addition, one spouse may be several years older than the other spouse. The combinations of 2-10, 2-20, and 10-20 can allow for these potential age differences between the spouses.

Taxpayer's Profile

There are several variables which are closely related to the taxpayer's economic status. Therefore, it seems feasible to combine these variables into taxpayer profiles. The utilization of taxpayer profiles will assist in allowing the analyses presented in this study to be of a manageable number (over 600 input combinations with over 3,000 distribution option calculations) without greatly reducing the effectiveness of the analysis of the optimal distribution options. These profiles have been classified into low, middle, and high income taxpayer categories for this study. The composition of each of these profile categories can be observed in Table IV. Specifically, the taxpayer profiles consist of the following variables which are either directly or closely related to the taxpayer's economic status: (1) value of the other assets at retirement, (2) percentage of retirement income consumed annually, (3) annual interest rate earned on the taxpayer's investments, (4) amount of plan benefits, (5) income tax bracket, and (6) estate tax bracket.

Other Assets. The distribution option selected may depend on the value of the other assets accumulated by the taxpayer. According to the life-cycle hypothesis of savings (Ando and Modigliani [1963]) an individual who has a high lifetime income will accumulate more assets than will another individual who has a lower lifetime income. A

strong association between income and asset accumulation was found by Friedman and Sjogren [1981]. For this reason, the value of the taxpayer's other assets are included as a part of the taxpayer's profile.

It was decided that this research would examine a situation in which the taxpayer is in a high estate tax bracket. If the high taxpayer profile had other assets of at least \$2,000,000, a high estate tax rate (50 percent) would be in effect. Friedman and Sjogren [1980] indicated that the total assets (without pensions) for a married couple in the middle taxpayer profile were \$51,807 in 1975. This amount was adjusted using the Consumer Price Index to determine the estimated value of the other assets owned by the middle taxpayer in 1985 (\$150,000). The Survey of Consumer Finances, 1983, reported in Avery, Elliehausen, Canner, and Gustafson [1984] indicates that the mean net worth is \$45,564 for families with income between \$20,000 and \$24,999. Thus, it appears reasonable to assume a \$50,000 value for other assets under the low taxpayer profile.

Percentage Of Retirement Income Consumed Annually.

Another variable influencing the employee's retirement decision concerns the possibility that certain employees at retirement will consume all retirement income available while others may not presently need the income from their retirement plans. It is reasonable to expect that the percentage of the retirement distribution to be consumed each year for a taxpayer in a lower tax bracket might be

greater than for a taxpayer in a higher tax bracket. Consequently, annual consumption needs are also included in the taxpayer's profile.

But in order to develop potential decision rules, it may be necessary to control certain variables so as to focus attention on the qualified retirement plan distribution options. For example, in order to examine the taxpayer's consumption needs for income produced from the qualified retirement plan (i.e., annuity payments or interest earned on investments as the result of a lump-sum distribution) it is necessary to control for the consumption needs related to the taxpayer's income from his or her other assets. The assumption that the taxpayer and the spouse consume all of the income from the other assets allows this study to focus upon the taxpayer's need for income solely from his or her qualified retirement plan.

The taxpayer's consumption needs for retirement plan income could be estimated if the portion of his or her income saved can be determined. The Senate's Committee on Aging in Developments in Aging: 1983 Volume 1 [1984] indicated that the average rate of savings for persons 65 and over is 6.1 percent of disposable personal income. The New Beneficiary Survey contracted by the Social Security Administration as reported in Maxfield and Reno [1985] found that the middle profile taxpayers receive approximately 24 percent of their total income from retirement pensions. Since all other income of the taxpayer is considered to be

consumed for the purposes of this study, it is possible to determine the portion of the qualified retirement income saved by dividing the percentage of income saved by the percentage of total retirement income from qualified plans. This procedure indicates that the middle profile taxpayers will save approximately 25 percent ($6.1\% \div 24\%$) and, thus, consume 75 percent of the income from a qualified retirement plan.

However, the percentage of savings in savings associations for persons 65 and over was reported in Developments in Aging: 1983 [1984] to be 11.3 percent. Since the median income of the depositors in savings associations is higher than in other financial institutions, it is felt that this savings rate may be the best indicator for the high profile taxpayer. Maxfield and Reno [1985] found that approximately 14 percent of total retirement income is from pension plans for the high profile taxpayer. Therefore, the percentage of retirement pension income saved by the high profile taxpayer is approximately 80 percent ($11.3\% \div 14\%$). As a result, the consumption percentage will be assumed to be 20 percent for the high profile taxpayer.

In order to investigate the impact of consumption needs on the model, the low and medium consumption levels are examined for the high and middle taxpayer profiles, respectively. However, in order to consider a range of consumption needs, a high consumption rate of 100 percent will be assumed for the low taxpayer profile.

However, if a lump-sum distribution option is selected, the income received is solely from investment earnings, but the annual receipts from an annuity includes both a return of the investment and a distribution of the earnings on the investment. The use of a savings rate percentage to determine the consumption needs of the taxpayer would result in differing consumption needs depending on the distribution option selected. Therefore, in order to control for the potential different consumption needs of the lump-sum distribution option and the annuity options, it was decided to use the dollar amount of the consumption needs determined under the lump-sum distribution option [after tax investment \times earnings rate \times (1-tax rate) \times (1-savings rate)] for the annuity options.

Earnings Rate. In this study it is assumed that income from all other assets is consumed annually. However, lump-sum distributions or unconsumed annuity distributions are assumed to be invested to earn the same rate of return as earned on the other assets. As a result, the earnings rate on the other assets is a necessary variable in order to determine the total income tax burden attributable to the retirement distributions of the taxpayer. In addition, the amount of interest income earned on the distributions could also influence the amount of estate taxes paid upon the death of the surviving spouse. This is especially true if the employee has allowed most of the retirement distributions to accumulate instead of being consumed.

However, the types of investments which the taxpayer selects from the proceeds of the lump-sum distribution will potentially influence the amount of income earned. The investments in which a taxpayer in a low tax bracket might invest could result in a lower annual earnings rate than what may be earned on investments by a taxpayer in a high tax bracket because of the possible different risk preferences or investment opportunities between these two groups. For example, the interest rate earned on certificates of deposit varies depending on whether the investment is above or below a certain dollar amount, such as, \$50,000. Therefore, the earnings rate on investments is also considered as a part of the taxpayer's profile.

It seems reasonable to expect the taxpayer to invest the lump-sum distribution proceeds from a qualified plan into similar types of investments in which the taxpayer has invested his or her other assets. Therefore, the rate of return earned on the investments resulting from a lump-sum distribution should be similar to that earned on the taxpayer's other assets. Table V is used to determine the weighted-average rate of return earned on the income producing assets owned by the taxpayer. Therefore, the interest rates to be used in this research will be nine percent for the high taxpayer profile, eight percent for the middle taxpayer profile, and six percent for the low taxpayer profile.

TABLE V
WEIGHTED-AVERAGE RATE OF RETURN

Assets	Low Taxpayer Profile			Middle Taxpayer Profile			High Taxpayer Profile		
	Percentage	Rate Of Return	Weighted Rate Of Return	Percentage	Rate Of Return	Weighted Rate Of Return	Percentage	Rate Of Return	Weighted Rate Of Return
	Of Assets Owned ^a			Of Assets Owned			Of Assets Owned		
Checking	5.76	0%	.000%	5.00	5.25 ^b	.263%	3.5	5.25 ^b	.184%
Savings	9.90	5.25 ^b	.520%	13.8	5.25 ^b	.725%	6.1	5.25 ^b	.320%
Money Market	10.82	8.44 ^c	.913%	10.9	8.44 ^c	.920%	10.7	8.60 ^c	.920%
Certificate of Deposit	36.28	5.75 ^b	2.086%	24.0	6.50 ^b	1.560%	13.9	9.61 ^b	1.336%
IRA	4.19	8.00 ^b	.335%	7.3	8.00 ^b	.584%	5.3	8.00 ^b	.424%
Savings Bonds	.40	9.26 ^c	.037%	1.2	9.26 ^b	.111%	.3	9.26 ^b	.028%
Stocks	6.57	9.00%	.591%	7.1	9.00%	.639%	14.7	9.00%	1.323%
Bonds	2.36	10.14 ^c	.239%	2.2	10.14 ^c	.223%	4.7	11.50 ^c	.541%
Nontaxable Bonds	1.10	7.71 ^c	.085%	1.0	7.71 ^c	.077%	9.1	7.71 ^c	.702%
Trusts	2.08	8.00 ^b	.166%	4.0	8.00 ^b	.320%	3.8	9.61 ^c	.365%
Rental Housing	3.93	9.10 ^d	.358%	.7	8.20 ^d	.057%	5.3	8.00 ^d	.424%
Vacation Homes	2.75	0%	.000%	3.4	0%	.000%	3.4	8.00 ^d	.272%
Commercial Property	1.58	9.10 ^d	.144%	2.0	8.20 ^d	.164%	1.8	8.00 ^d	.144%
Nonfarm Land	3.53	6.00 ^d	.212%	5.1	12.30 ^d	.627%	4.6	7.50 ^d	.345%
Business	3.71	5.10 ^e	.189%	5.1	14.30 ^e	.729%	5.8	11.80 ^e	.684%
Professional Practice	1.11	20.40 ^d	.226%	1.4	25.10 ^d	.351%	1.7	20.90 ^d	.684%
Farms	3.93	3.57 ^f	.140%	5.8	3.57 ^f	.207%	5.3	3.57 ^e	.189%
Total			<u>6.241%</u>			<u>7.557%</u>			<u>8.520%</u>

^aSources: U.S. Senate Special Committee on Aging, Development In Aging: 1983, Volume 1, Washington, D.C. Government Printing Office, 1984 and Robert B. Avery, Gregory E. Elliehausen, Glenn B. Canner, and Thomas A. Gustafson, "Survey of Consumer Finances, 1983," Federal Reserve Bulletin (September 1984).

^bSource: Federal Reserve Board, Annual Statistical Digest 1981 (1982).

^cSource: Wharton Econometrics Forecasting Associates, Long-Term Historical Data (September 1984).

^dSource: Leo Troy, Almanac of Business and Industrial Financial Ratios, Editions 1985-1977.

^eSource: Internal Revenue Service, Statistics of Income—1983-1973 Corporation Income Tax Returns (1985-1976).

^fSource: Federal Reserve Board, Agricultural Finance Databook (July 1985).

However, the interest rates earned on investments may vary over the lives of the employee and of his or her spouse. But, at the time of the retirement distribution decision, the future changes in interest rates are unknown. Besides, there is really no way to accurately predict the possible fluctuations in interest rates. Thus, even though possible interest rate changes, if known, might influence the distribution option selected, a constant annual interest rate earned on investments is assumed for each taxpayer's profile so as to simplify the analysis (i.e., six percent for the low profile, eight percent for the middle profile and nine percent for the high profile).

Qualified Plan Balances At Retirement. Since most qualified retirement plans require employer contributions to be based on a percentage of the salary of the employee, the fund balance at retirement normally is closely related to the employee's lifetime income from employment (i.e., economic situation). Because of this possible economic relationship, the amount of plan benefits (i.e., fund balance) is also included in the taxpayer's economic profile.

Table VI presents an estimate of qualified plan balances at retirement for employees with salaries of \$25,000, \$50,000 and \$100,000 just prior to retirement. For calculation purposes, the employees were assumed to have participated in the plan for 25 years and the contribution rate was assumed to have been six percent.¹ So as to allow for changes in wages over the 25 years of employment, the

TABLE VI
QUALIFIED PLAN BALANCE AT RETIREMENT

	Low Profile <u>Taxpayer</u>	Middle Profile <u>Taxpayer</u>	High Profile <u>Taxpayer</u>
Salary at retirement	\$ 25,000	\$ 50,000	\$100,000
Qualified plan balance at retirement	\$ 70,000	\$140,000	\$275,000

pre-retirement income was assumed to have increased by five percent a year.² It was also assumed that the trustee of the pension plan was able to earn a nine percent rate of return over the 25 years.³ Table VI indicates that a reasonable retirement plan balance could feasibly be assumed to be \$70,000 for the low profile taxpayer, \$140,000 for the middle profile taxpayer, and \$275,000 for the high profile taxpayer.

In order to determine the amount of estate taxes that are paid by the employee's estate, it is necessary to know the total amount of assets at the time of the employee's death. The portion of the distribution not consumed (saved) and the interest earned thereon affect the size of the estate left by the employee. The annual percentage of the distribution saved (i.e., the complement to the percentage of the distribution consumed each year) and the appropriate interest rate earned on investments (i.e., six percent for the low profile, eight percent for the middle profile and nine percent for the high profile) are used in this study in determining the gross amount of the estate upon the death of each spouse.

Income Tax And Estate Tax Brackets. The potential amount of income taxes to be paid when the distribution is received can influence the distribution method selected. Therefore, income tax brackets are included as a variable of this research. Also, the possible exposure to estate taxes may influence the retirement distribution options selected

by the employee. For this reason, the estate tax brackets are considered as another variable to be used in this research study.

Taking into consideration the dollar value of the other assets owned by the taxpayer, the dollar amount in the retirement fund and the earnings rate available to the taxpayer, it seems feasible that the high taxpayer will have an annual taxable income during retirement between \$180,000 and \$200,000. It is expected that the middle taxpayer should have an annual taxable income between \$22,000 and \$46,000. The annual taxable income for the low taxpayer may range from \$7,000 to \$15,000. Table VII shows the range of tax rates for the 1985 tax year and the range of tax rates under the Tax Reform Act of 1986 (TRA-1986) for the above assumed taxable income amounts during retirement.

Under TRA-1986, besides the "two-tier" income tax rate schedule, there is an additional five percent tax levied on taxable income in excess of \$71,900 for couples filing a joint return. But this additional five percent tax cannot exceed the sum of 13 percent of the first \$29,750, for a couple filing a joint return, and 28 percent of the deduction for personal exemptions. Therefore, taxpayers with taxable income of over \$71,900 are taxed at a rate between 28 and 33 percent depending on their taxable income and number of exemptions. As Table VII indicates, the high taxpayer's potential taxable income range would result in the retirement plan income taxed between 30 to 31 percent.

TABLE VII
TAXABLE INCOME RANGE AND INCOME TAX RATES

<u>Taxpayer Profile</u>	<u>Potential Taxable Income Range</u>	<u>Range of Income Tax Rates For 1986</u>	<u>Range of Income Tax Rates Under TRA-1986</u>	<u>Tax Rates To Be Invest- igated For 1985</u>	<u>Tax Rates To Be Invest- igated under TRA-1986</u>
Low	\$ 7,000--15,000	14%-16%	15%	15%	15%
Middle	\$ 22,000--46,000	22%-33%	15%-28%	25%	15%-25%
High	\$180,000--200,000	50%	30%-31%	50%	31%

Since the earnings from the investment of other assets would result in the high taxpayer being in the 50 percent income tax bracket in 1985 before considering the retirement plan income, it is assumed that for the 1985 tax year the high taxpayer's retirement plan income will be taxed at the 50 percent rate. For the same reason, it is assumed that the income tax rate under TRA-1986 (when the "two tier" tax rate is in full force) will be 31 percent.

However, because of the relatively small dollar amount of the low taxpayer's other assets available for investment, the majority of the taxable income probably would be generated from the low taxpayer's retirement plan. Therefore, it will be assumed that the retirement plan income will be taxed at 15 percent both in 1985 and under TRA-1986.

In order to distinguish between the low and the middle taxpayer profiles, the 25 percent tax rate for the 1985 tax year was selected for the middle taxpayer profile. However, under the "two-tier" tax rate approach enacted by TRA-1986, the \$29,750 cutoff between the 15 percent tax bracket and the 28 percent tax bracket for a joint return occurs in the middle of the possible taxable income range of the middle taxpayer. Because of the fairly large increase in the tax rate (from 15 to 28 percent), it was felt that one assumed tax rate under TRA-1986 for the middle taxpayer would not be satisfactory. Therefore, a tax of 15, 19, or 25 percent will be used depending on two major factors in determining the level of income, that is, the age of the taxpayer at

distribution and whether both spouses are alive when the distribution option is selected.

The estate tax rate applicable to an estate depends on the value of the assets owned by the decedent at death (i.e., the sum of the other assets and the retirement fund balance). The value of the decedent's estate at death may vary greatly depending on the retirement plan distribution option selected. Therefore, for each scenario investigated an actual estate tax liability will be calculated.

However, the actual estate tax rate imposed at the time of the death of the first spouse will depend not only on the total asset value at death, but also on whether the spouse and/or a nonspousal beneficiary inherits the assets. For example, if the assets are all bequeathed to the surviving spouse, the marital deduction would result in no estate taxes being imposed at the death of the first spouse.⁴ But if all the assets are distributed to a nonspousal beneficiary, the estate may be subject to estate taxes.

On the other hand, for taxpayers whose total assets exceed one unified credit (i.e., \$600,000 after 1986), a bequest of all assets to the surviving spouse may result in higher total estate taxes being paid than is necessary when the assets are finally inherited by other beneficiaries. This situation develops because both spouses have not maximized their total unified credit (i.e., \$1,200,000 after 1986). To illustrate this, it is assumed that an

estate of \$3,000,000 is left by the decedent whose spouse has no estate. The total taxable estate can be effectively reduced, after 1985, to \$1,800,000 by distributing assets with a value of at least \$600,000 at the death of the taxpayer to a nonspousal beneficiary and distributing enough assets to the spouse to ensure that the spouse has a sufficient estate to take advantage of his or her unified credit. But, if the entire estate is left to the surviving spouse, only one unified credit, at the death of the surviving spouse, can be utilized, and thus, the taxable estate would effectively be \$2,400,000. Therefore, for this research it is assumed that all assets other than what is necessary to maximize the unified credit are bequeathed to the surviving spouse.

Assets Of Spouse

A factor influencing a taxpayer's decision regarding his or her final asset disposition is the amount of assets owned personally by the spouse. The assets possessed by the spouse not only affect the income needs of the surviving spouse but also have an impact on the total amount of estate taxes paid by the couple. Therefore, the assets owned by the spouse are considered to be a variable in this research.

For many couples presently approaching retirement, each spouse may own approximately half of the total assets of the couple. However, there may be more estate tax consequences if only one spouse owned almost all of the

assets of the couple. For this reason, it was decided to investigate a situation where the taxpayer owns all the assets. In order to examine these possibilities, it is assumed that the spouse either owns no personal assets or owns 50 percent of the couple's total assets (See Table IV).

Plan Variables

The model also incorporates several variables dealing with the employee's participation in the retirement plan. As mentioned earlier in this paper, there is an allowable income tax exclusion when the taxpayer has made required employee contributions to a qualified retirement plan. In addition, a special tax treatment may be available for pre-1974 participation in qualified plans.

Pre-1974 Contributions

Depending on the beginning date of participation in the retirement plan, the distribution may qualify for capital gain treatment. For distributions made prior to 1987, the capital gain treatment was available only to the extent that the employee participated in a qualified retirement plan before 1974.

Since this research is not investigating any distributions made before the taxpayer reaches the age of 65, the taxpayer's age is assumed to be 65 in 1985. Therefore, the taxpayer is assumed to satisfy the age exception under TRA-1986 (50 years old by January 1, 1986), which allows the

taxpayer to continue treating the pre-1974 participation as a capital gain. Because of the potential lower income tax liability that will result if the capital gain treatment is elected, this election option will be examined for the 1985 tax year and also under the TRA-1986 provisions. Therefore, the percentage of pre-1974 contributions is one of the factors of the plan variables for the 1985 tax year and under the TRA-1986 provisions (See Table IV).

Because many employers did not provide qualified pension plans to their employees prior to 1974, their employees will not have any pre-1974 contributions. But, for those employees with pre-1974 qualified plan participation, the possible tax advantage of the capital gain treatment should be investigated. The capital gain treatment potentially will result in a tax advantage if there had been substantial pre-1974 plan participation (for example, 25 percent).

Employee's Contributions

Even though many retirement plans require no employee contributions, some plans do require employee contributions. These required contributions do not qualify for a tax deduction at the time of the contribution for income tax purposes. As a result, these nondeductible, required contributions are effectively made from after tax dollars. To prevent double taxation, a portion of each annuity payment received may be excluded if the employee has made nondeductible contributions to the retirement plan.

Thus, it is necessary to consider in this study the percentage of nondeductible contributions to retirement plans made by employees. Department of Labor statistics published in Estimates of Participant and Financial Characteristics of Private Pension Plans [1983] indicated that approximately 12 percent of contributions to retirement plans are made by employees. In order to examine the impact of required employee contributions on the distribution option selected, this study will investigate both a zero and a 12 percent level of employee contributions.

Other Parameters

For the situations in which the spouse elects the distribution option because the taxpayer died before the elected or required distribution date, the period before the spouse has to elect the distribution option may vary depending on the spouse's age. For this reason, the age difference between the spouses is a factor investigated in this research when the spouse elects the distribution option.

Certain married couples are approximately the same age (e.g., no age difference between the spouses), but for other couples there may be a few years difference in their ages (e.g., five years). There also may be situations in which there are larger age differences between the spouses (e.g., ten years). Therefore, in this research, when the spouse elects distribution, the spouse is assumed to be:

(1) the same age as the taxpayer, (2) five years younger than the taxpayer or (3) ten years younger than the taxpayer.

If there is no age difference between the spouses, it is assumed that the change in the financial position of the spouse because of the taxpayer's death will necessitate the spouse to select the distribution option immediately upon the taxpayer's death. However, for the spouses who are either five years or ten years younger than the taxpayer, it is assumed that the spouse may have the following options at the death of the taxpayer: (1) start receiving annuity payments immediately, (2) continue the IRA until the spouse reaches the age of 65, or (3) roll the retirement fund balance over into an IRA until the spouse reaches the age of 65. If either of the last two options is selected, the spouse at the age of 65 may elect either a lump-sum distribution or an annuity.

Another factor which also influences the amount of the annuity payment received by the annuitants at retirement is the interest rate implied (imputed) in the annuities. The larger the implied interest rate of an annuity the greater is the taxable portion of the annuity. Therefore, the implied interest rate in annuities is a factor included in this research study.

The implied interest rate used by insurance companies in determining the annual annuity payment is approximately the same for all annuities of the same type issued at the same time. Several insurance companies have indicated

that the present implied interest rate used for a joint annuity with a 50 percent payment continuing to the spouse after the annuitant's death from a qualified pension plan is approximately ten percent.

Bell and Graham (1984) have indicated that there is approximately a one percent drop in the implied interest rate if a joint life annuity is changed from the 50 percent option to the 100 percent option. Therefore, for an annuity with a 100 percent option, the implied interest rate will be nine percent (10%-1%). In order to distinguish between a joint life annuity and a single life annuity that would be issued when only one spouse is alive at the distribution date, the implied interest rate is assumed to be 11 percent for a single life annuity.

In determining the annuity payment received by the annuitants, insurance companies use an actuarial estimate of the remaining life of the annuitants at the time the annuity is issued. For this research the remaining expected life of 17 years and 13 years [Statistical Abstract of the United States: 1985 (1984)] will be used in the determination of the annuity payments for individuals who are 65 and 70 1/2 years old, respectively, at the date the annuity is issued.

For the situation in which the spouse elects distribution and there is no age difference between the spouses, the remaining expected life is assumed to be 16 years for the purpose of determining the amount of the annual annuity receipts. When the age difference between

the spouses is five years, the amount of the annual annuity receipts is determined based on a life expectancy of 19 years if an annuity is elected immediately after the taxpayer's death. On the other hand, the amount of the annual annuity receipts, when there is a ten-year age difference between the spouses, is calculated assuming a 22-year life expectancy if an annuity is elected immediately following the death of the taxpayer. For the cases where the spouse is either five years or ten years younger than the taxpayer and the distribution is delayed until the spouse has attained the age of 65, the amount of the annual annuity receipts is determined based on a life expectancy of 17 years.

Tax Law Changes

Certain tax law changes may have an impact on the optimal distribution option for qualified retirement plans. The Tax Reform Act of 1986 (TRA-1986) has revised not only the tax rates (See Table VII), but also certain other provisions more directly related to the qualified retirement plan. Several of these revisions may potentially influence the optimal distribution option from a qualified retirement plan.

For example, the repeal of the regular income averaging method may affect the amount available to the taxpayer's beneficiaries if the distribution is rolled over into an IRA, which is, at the required distribution date,

distributed as a lump-sum distribution to be invested. In addition, the revision of the exclusion ratio provision may influence the amount that can be bequeathed to the beneficiaries for taxpayers who live longer than the normal life expectancy. Further, the change in the tax rate for the capital gain portion of a lump-sum distribution (i.e., pre-1974 participation) may alter the amount available to the taxpayer's beneficiaries if the lump-sum distribution option is selected.

The additional taxes levied on excess distributions and excess retirement accumulation, enacted in TRA-1986, may decrease the amount the beneficiaries will receive for certain taxpayers. However, the maximum amount that could be distributed or accumulated for the high taxpayer profile in this research does not exceed the limitation established under TRA-1986. Therefore, these special tax provisions are not investigated in this research.

But, since many of the provisions under TRA-1986 could influence the optimal distribution option for taxpayers, the 1985 tax year provisions and the TRA-1986 provisions will both be examined in this research.

Assumptions

The following assumptions have been discussed when developing the various variables which are integrated in the model:

1. The distribution option decision is made when

the taxpayer reaches the age of 65.

2. All assets other than what is necessary to maximize the unified credit are bequeathed to the surviving spouse.
3. The taxpayer and the spouse consume all of the income from their other assets.
4. There is a constant annual interest rate earned on investments for each taxpayer profile, but the annual interest rate earned varies depending on the taxpayer profile.
5. The taxpayer seeks to maximize the amount bequeathed to the beneficiaries from the qualified retirement plan.
6. The taxpayer is expected to invest the lump-sum distribution proceeds into similar types of investments in which the taxpayer has invested his or her other assets.
7. If there is no age difference between the spouses, the spouse selects the distribution option at the death of the taxpayer; otherwise, the spouse selects the distribution option when the spouse attains the age of 65.

In addition to these assumptions, there are several other assumptions incorporated in the research. For this research it is assumed that 1985 income and estate tax rates are in effect except when investigating the effects of TRA-1986. The "two tier" income tax rate schedule and

the 15 percent rate and personal exemption phase out are used in this research (i.e., the transitional tax rates are not used) to investigate the effects of the enactment of TRA-1986 on the optimal distribution option for qualified retirement plans.

Many retirement plans do not allow for continuation of contributions to a qualified retirement plan after an employee reaches the age of 65 even if the employee continues to work. As a result, it is assumed that there is no additional contribution to the retirement plan if the employee decides to postpone distribution until he or she attains the age of 70 1/2.

There are more distribution options available for a married taxpayer than for a single taxpayer. Thus, the distribution option decisions are more complex for a married taxpayer. In addition, most options available to a single taxpayer are also available to a married taxpayer. Therefore, this research will investigate only distribution option decisions for married taxpayers.

Validation

The simulation technique like other research designs has to consider both the external validity and the internal validity in developing the research design. The following steps were taken to ensure the external validity of the model used in this research: (1) an in-depth review of books and journals related to qualified retirement plans.

(2) an extensive analysis of all relevant Internal Revenue Code Sections which would be expected to influence qualified retirement plan distributions, (3) a review of legal and tax journal articles which discussed tax provisions concerning the distributions of qualified retirement plans, and (4) discussions with insurance officials and investment advisers concerning the operating aspects of a qualified retirement plan distribution.

The internal validity of the model was substantiated through an extensive detailed analysis of the printouts of the programs. In the formation of the model, a subprogram for each potential distribution option (e.g., a lump-sum distribution or issuance of an annuity) was developed. Then, each subprogram was debugged separately for syntax and obvious logic errors. In analyzing each subprogram, print statements for every meaningful variable or parameter were entered throughout the program. Then, each calculation in the subprograms was mechanically reperformed utilizing the various equations developed during the formation of the model. The estate and income tax computations were reperformed using the applicable tax forms or tax schedules.

After the program was executed, one more validation step was utilized. The output (e.g., total income taxes paid, total taxes paid, and total amount bequeathed to the beneficiaries) was reviewed for different process runs for possible illogical or questionable results. For example, if the value of one variable varied between two

runs, the expected direction of the change in the output was predetermined and then compared with the actual change.

Decision Criterion

In this research, it has been assumed that the middle taxpayer and the high taxpayer will save 25 percent and 80 percent, respectively, of the income from his or her retirement plan. The fact that these taxpayers are accumulating savings probably implies that they are satisfied with their standard of living during retirement.

The low taxpayers probably will not consume more than the income from their investments unless absolutely necessary because they realize that once they consume part of their principal, their income and future standard of living will decline. Thus, even though the low taxpayers may not be satisfied with their standard of living, they accept their standard of living in order to allow for potential emergencies.

When the retired taxpayer's standard of living has been satisfied or accepted, the taxpayers with surviving families are often concerned about the amount that they will be able to bequeath to their beneficiaries. Thus, it seems feasible that taxpayers may consider the amount that will be available to their beneficiaries when selecting their retirement plan distribution options. Therefore, as long as the taxpayer's standard of living is satisfied or accepted under any of the possible distribution options, a rational

taxpayer will probably consider the amount bequeathed to the beneficiaries in making his or her selection.

It seems reasonable that a taxpayer would want to maximize the amount that is available to his or her beneficiaries. Therefore, when analyzing each variable set in selecting the optimal distribution option, the decision criterion will be the option which results in the maximum amount being bequeathed to the beneficiaries.

ENDNOTES

¹An insurance company executive has indicated that retirement plans typically require employer/employee contributions of approximately six percent of employee's salaries.

²An insurance company executive stated that his company presently uses a five percent increase in salaries per year for prediction purposes.

³An insurance company executive has indicated that nine percent was a reasonable estimate of the average pension plan earnings over the last 25 years.

⁴However, prior to 1982 the marital deduction was limited to the greater of 50 percent of the adjusted gross estate or \$250,000.

CHAPTER IV

RESEARCH RESULTS FOR 1985 TAX

YEAR PROVISIONS

In deciding on the optimal distribution option, the decision may vary depending on whether the taxpayer elects distribution at the age of 65 or at the age of 70 1/2. Therefore, the discussion of the research results will be presented separately for each of the potential distribution ages. In addition, the life expectancy of the taxpayer (two, ten, or 20 years) may affect the optimal distribution option; thus, the research results will be further divided according to the age of the taxpayer.

Also, the research analysis is further divided based on the taxpayer profiles (low, middle, high). As discussed in Chapter III, these taxpayer profiles include several directly or closely related economic variables. The research results will also be examined according to the plan variables (pre-1974 contributions and employee's contributions) and the spousal variables (life expectancy, age difference between spouses, and other assets owned by the spouse).

Distribution At The Age Of 65

Taxpayer's Life Expectancy Of Two Years

Table VIII summarizes the results for a taxpayer who elects distribution at the age of 65 and dies two years after retirement based on the spouse's life expectancy and the age difference between the spouses. As can be observed in Table VIII, the optimal distribution option varies depending on the taxpayer profile (e.g., the option to roll over into an IRA is the optimal distribution option for the taxpayers in the low and middle profiles with a spouse's life expectancy of two years, but the optimal distribution option for the taxpayer in the high profile is a lump-sum distribution [LSD]). But, the optimal distribution option also varies within each taxpayer profile according to the spouse's life expectancy (e.g., the optimal distribution option for the middle taxpayer is the IRA option for the spouse's life expectancy of two years, but becomes the LSD option when the spouse's life expectancy is ten years and there is no age difference between the spouses). In addition, the age difference between the spouses results in varying optimal distribution options (e.g., when the spouse's life expectancy is ten years, the high taxpayer's optimal distribution option is the LSD option when the age difference between the spouses is five years, but shifts to the IRA option when the age difference between the spouses is ten years).

TABLE VIII

TAXPAYER ELECTS DISTRIBUTION AT THE AGE OF 65
TAXPAYER'S LIFE EXPECTANCY IS 2 YEARS

Taxpayer Spouse's Life Expectancy	Low			Middle			High		
	Age Difference Between Spouses			Age Difference Between Spouses			Age Difference Between Spouses		
	0	5	10	0	5	10	0	5	10
2	IRA	IRA	IRA	IRA	IRA	IRA	LSD	LSD	LSD
10	LSD ^{1,2}	IRA-INV	IRA	LSD	LSD	IRA	LSD	LSD	IRA
20	IRA-AN	IRA-AN	IRA-AN	IRA-AN	IRA-AN	IRA-AN	IRA-AN	IRA-AN	LSD

¹IRA-INV if the taxpayer has no pre-1974 participation but has nondeductible contributions to the retirement plan.

²IRA-AN if the taxpayer has neither pre-1974 participation nor nondeductible contributions to the retirement plan.

LSD = Lump sum distribution

IRA = Rolled over into an IRA

IRA-AN = Rolled over into an IRA and at the required distribution date the IRA balance is used to acquire a single life annuity

IRA-INV = Rolled over into an IRA and the after income tax lump sum distribution from the IRA at the required distribution date is invested

As also can be noted in Table VIII, the optimal distribution option varies depending on the plan variables (pre-1974 contributions and employee contributions). However, the percentage of the other assets owned by the spouse (0 or 50 percent) apparently does not affect the optimal distribution option.

Spouse's Life Expectancy Of Two Years

Many of the optimal distribution option results are as might be expected. Remember that the decision criterion is based on the maximum amount bequeathed to the beneficiaries. Since most of the fund balance from the retirement plan under an annuity option is lost if the taxpayer and the spouse die soon after retirement, it is obvious that neither an annuity with 100 percent payments continuing to the spouse (AN-100) nor an annuity with 50 percent payments continuing to the spouse (AN-50) will be the optimal distribution option. In addition, in comparing the LSD option to the IRA option, the LSD option will result in income taxes being paid immediately, which reduces the total amount of assets owned by the taxpayer, while the IRA option results in no immediate payment of income taxes. Therefore, when both spouses die before the IRA is required to be distributed (i.e., when there are two-year life expectancies for both the taxpayer and the spouse), the maximum amount bequeathed to the beneficiaries will result if the IRA option is elected when there are no estate taxes which is

the case for the low and middle taxpayers. The low and middle taxpayers are not subject to estate taxes since their total assets are less than the \$600,000 of assets allowed for the unified credit.

However, the high taxpayer has to consider both the income tax and estate tax effects when selecting the distribution option. The combined effect of the income tax and estate tax results in a change in the optimal distribution option from the IRA option to the LSD option for the high taxpayer when both spouses die soon after retirement. It appears that the combined effect of the lower effective tax rate under the ten-year averaging method along with the slightly higher earnings rate (nine vs. eight percent) results in the shift from the IRA option to the LSD option.

Spouse's Life Expectancy Of Twenty Years

Exhibit 1 has been developed to assist in the analysis of the remaining cases. In this analysis it is also necessary to remember that the spouse is assumed to elect distribution from the IRA fund upon the death of the taxpayer if there is no age difference between the spouses and at the age of 65 if the age difference between the spouses is either five years or ten years. As a result of this assumption, the period in which the retirement fund is rolled over into an IRA (i.e., IRA rollover period) ranges from two years to ten years (See Exhibit 1). The length of the annuity distribution period is from zero to 18 years.

EXHIBIT 1

IRA ROLLOVER AND ANNUITY DISTRIBUTION PERIODS
TAXPAYER ELECTS DISTRIBUTION

Age Difference Between Spouses	Spouse's Life Expectancy			
	10 Years		20 Years	
	IRA Rollover Period	Annuity Distribu- tion Period	IRA Rollover Period	Annuity Distribu- tion Period
0	2	8	2	18
5	5	5	5	15
10	10	0	10	10

Low Taxpayer. If the annuity option (AN) is selected, a joint annuity is issued because both the taxpayer and the spouse are alive at the issuance date. But when the IRA option is selected and the taxpayer's life expectancy is two years, only the spouse is assumed to be alive when the IRA is distributed, and as a result, a single life annuity is assumed to be issued. The shift from a joint to a single life annuity alone causes the amount received from the annuity to be greater under the IRA-AN option. When the annuity receipts exceed the dollar amount of the annual consumption, the remaining amount is assumed to be saved. Thus, the larger annual annuity receipts under the IRA-AN option will result in more accumulated savings being available to the beneficiaries.

In addition, the annual annuity receipts are larger when the IRA-AN option is elected because the premium paid for the annuity is greater under the IRA-AN option (i.e., the

IRA fund balance) than under the AN option (i.e., the retirement fund balance). This situation occurs because of the accumulation of interest related to the IRA account balance during the IRA rollover period. Therefore, the IRA-AN option is normally preferred to the AN option.

In comparing the LSD option to the IRA-INV option (i.e., the option to invest the distribution from the IRA), it is necessary to recall that the LSD option qualifies for the ten-year averaging method while the IRA-INV option does not. For most taxpayers the ten-year averaging method¹ will result in less income taxes being incurred than under the regular income averaging method², which is the only procedure available for the IRA-INV option. When the difference between the amounts of income taxes incurred under these two options is greater than the earnings that accumulate in the IRA during the IRA rollover period, the preferred option would be the LSD option. The shorter the IRA rollover period the more likely the tax advantage of the LSD option will result in a greater amount to be bequeathed to the beneficiaries than would be available under the IRA-INV option.

For the low taxpayer it has been assumed that the earnings from the after tax lump-sum distribution are consumed annually. This same dollar amount is also assumed to be consumed each year under the AN and the IRA-AN options. As a result, the amount saved under the AN and the IRA-AN options is the difference between the annual annuity receipts and the dollar amount consumed.

Since all earnings are assumed to be consumed under the LSD and the IRA-INV options, the amount that is available to the beneficiaries is only the after tax balance of the distributed fund when either the LSD option or the IRA-INV option is elected. Because the annuity receipts involve both a return of the investment and a distribution of the earnings on the investment, the annuity receipts will be greater than the earnings from either the LSD option or the IRA-INV option. Consequently, more annual savings will accumulate, and will eventually be bequeathed to the beneficiaries, if either the AN option or the IRA-AN option is elected.

If the total accumulated savings from the annuity receipts under the IRA-AN option are greater than the after tax balance from the LSD option, the IRA-AN option will be preferred to the LSD option. The longer the annuity distribution period, the more likely that the IRA-AN option will be preferred to either the LSD option or the IRA-INV option. When the spouse's life expectancy is 20 years, the annuity distribution period of ten to 18 years (See Exhibit 1) is apparently sufficiently long enough to allow the IRA-AN option to be the optimal distribution option for the low taxpayer.

Middle Taxpayer. The higher the implied annuity earnings rate the greater the annuity receipts will be to the annuitant. Thus, there would be larger annuity payments if the implied annuity earnings rate is 11 percent instead

of eight percent. In this research, an 11 percent implied annuity earnings rate was assumed for a single life annuity, but the earnings rate on investments for the middle taxpayer is assumed to be only eight percent.

The difference between these two rates will cause the portion of the annuity receipts received by the spouse that exceeds the annuity premiums to be greater than the amount that could be earned if the annuity premiums had been invested by the spouse. That is, there will be more earnings income available to the spouse who elects an annuity distribution from the IRA (IRA-AN option) than would be available from a direct investment (IRA-INV option). However, the effect of the difference between the two earnings rates will be recognized only if the spouse lives long enough to recover the premiums paid for the annuity. The closer the actual annuity distribution period is to the insurance company's projected distribution period, the more likely the difference between the two earnings rates will influence the amount available to be saved by the spouse.

The difference between the earnings rates has a greater influence on the middle taxpayer than on the low taxpayer because the middle taxpayer is assumed to consume only 75 percent of the earnings from the LSD option or the IRA-INV investments instead of the 100 percent consumption rate assumed for the low taxpayer. When the spouse saves a portion of the annuity payments and the annuity distribution period is relatively long, the additional income from the

IRA-AN option may result in a larger amount being available to the beneficiaries than would be available if the LSD option had been elected.

As long as the total accumulated savings from the IRA-AN option exceed the sum of the LSD after tax balance plus the accumulated savings from the LSD investments, the IRA-AN option will be the preferred option. As discussed above, the relatively long (10-18 years) annuity distribution period evidently is sufficient to allow the IRA-AN option to outperform the LSD option when there is a three percent earnings rate difference between the two options. Therefore, the optimal distribution option is the IRA-AN option for the middle taxpayer when the spouse's life expectancy is 20 years.

High Taxpayer. Under the LSD option, the earnings from investments are subject to income taxes as earned, while the earnings that accumulate in the IRA are not subject to income taxes until distributed. The postponement of the income taxes on the IRA earnings allows more earnings to accumulate in the IRA fund (i.e., compound effect). This is especially true for the high taxpayer since the taxable earnings are subject to a 50 percent income tax rate.

In comparing the LSD and the IRA-INV options, the preference depends on whether the tax advantage of the LSD option over the IRA-INV option is sufficient to counteract the IRA compound effect. It appears that the ten-year income averaging method gives the LSD option the advantage

over the IRA-INV option.

Apparently, the ten to 18 year annuity distribution period (See Exhibit 1) is long enough for the annuitant to recover the cost of the annuity (i.e., the IRA balance). The fact that the cost of the annuity is recovered results in the retirement fund balance being effectively taxed at the 50 percent rate while the LSD option results in the retirement fund balance normally being taxed at a much lower rate for the high taxpayer.

The large difference in the amount of income taxes paid related to the retirement fund balance between the LSD option and the IRA-AN option requires a substantial compound effect in order to offset the income tax advantage of the LSD option. However, because the investment earnings rate (nine percent) is higher than the IRA earnings rate (eight percent), the compound effect is reduced for the high taxpayer.

As previously mentioned, the closer the actual annuity distribution period is to the insurance company's projected distribution period, the more likely the difference between the annuity earnings rate (11 percent) and the investment earnings rate (nine percent) will influence the amount that is accumulated. Apparently, when the annuity distribution period is at least 15 years, the spouse will receive sufficient additional earnings because of the high annuity earnings rate to offset the LSD tax advantage. As a consequence, the IRA-AN option is the optimal distribution

option for the high taxpayer when the age difference between the spouses is either zero or five years.

However, when the age difference between the spouses is ten years, the spouse receives fewer annuity payments than had been projected. Therefore, under the IRA-AN option the spouse effectively receives very little earnings income from the annuity during the annuity distribution period, while the spouse receives a nine percent rate of return on the after tax LSD investments during this period.

Evidently, when the age difference between the spouses is ten years, the combined effect of (1) the large difference between the effective LSD income tax rate and the taxpayer's income tax rate of 50 percent, (2) the reduced compound effect, and (3) the difference between the effective annuity earnings rate and the investment earnings rate earned during the annuity distribution period results in a larger amount being available for the beneficiaries under the LSD option than under the IRA-AN option. Therefore, for the case involving a high taxpayer who has a spouse with a life expectancy of 20 years and the age difference is ten years, the optimal distribution option is the LSD option instead of the IRA-AN option.

Spouse's Life Expectancy Of Ten Years

Low Taxpayer. The optimal distribution option has the greatest variability for the low taxpayer when the spouse's life expectancy is ten years. When there is no age

difference between the spouses, there is a short (two years) IRA rollover period which may reduce the compound effect. Also, with the shorter annuity distribution period, the advantages of the IRA-AN option may be weakened.

However, the LSD option is the optimal distribution option when the taxpayer has made nondeductible contributions and has pre-1974 contributions. The nondeductible contributions are not subject to income taxes upon the distribution from the retirement fund because the employee has paid income taxes when the contributions were made. The portion of the retirement fund accumulated from the pre-1974 contributions qualifies for capital gain treatment which reduces the amount of income taxes paid for most taxpayers. The LSD option as previously mentioned also qualifies for a potential tax savings by using the ten-year income averaging method. Only for the situation when the tax on the lump-sum distribution is at the absolute lowest is the LSD option the optimal distribution option for the low taxpayer assuming that there is no age difference between the spouses.

But when there are no pre-1974 contributions, one of the IRA options is preferred. Whether the optimal distribution option is the IRA-INV option or the IRA-AN option varies depending on the nondeductible employee contribution factor. If the low taxpayer has made nondeductible employee contributions, the optimal distribution option is the IRA-INV option; otherwise, the optimal distribution option is the IRA-AN option.

Note: The detailed output indicates that there is less than a two percent difference between the optimal distribution option and the second best option for all cases in which the spouse's life expectancy is ten years and there is no age difference between the spouses.

When the age difference between the spouses is five years, a clear-cut optimal distribution option (IRA-INV) is indicated for the low taxpayer. The relatively long IRA rollover period of five years (See Exhibit 1) apparently is adequate enough to allow the compound effect to shift the optimal distribution option from the LSD option to the IRA-INV option even when there are nondeductible employee contributions and pre-1974 contributions.

However, when the age difference between the spouses is five years instead of zero, the annuity distribution period is shorter (See Exhibit 1). As discussed previously, the shorter the annuity distribution period the more likely there will be a loss from unrecovered premium costs. This will cause the IRA-AN option to be undesirable. This potential loss from unrecovered premium costs has evidently resulted in the IRA-INV option being preferred to the IRA-AN option regardless of the nondeductible contribution factor.

However, as can be observed in Exhibit 1, when the spouse's life expectancy is ten years and the age difference between the spouses is also ten years, the IRA balance is not distributed before the spouse dies. The income taxes paid on the LSD option reduce the amount available to the

beneficiaries, but the undistributed IRA balance has not been subject to income taxes. This causes the IRA balance upon the death of the spouse to be larger than the after tax balance from the LSD option. The compound effect discussed above also results in the IRA option being preferred to the AN option. Therefore, when the spouse's life expectancy is ten years and the age difference between the spouses is also ten years, the IRA option is the optimal distribution option for the low, middle and high taxpayers.

Middle Taxpayer And High Taxpayer. Because of the relatively short annuity distribution period that occurs when the spouse's life expectancy is ten years, the cost of the premiums paid for an annuity may not be recovered or at best only a small amount above the cost will be received by the spouse. This substantially weakens the desirability of the IRA-AN option.

For both the middle and the high taxpayers, the difference between the effective income tax amount paid under the LSD and the IRA-INV options is greater than for the low taxpayer. Unless the compound effect counteracts the tax savings under the LSD option, the LSD option will be preferred over the IRA-INV option for the middle and the high taxpayers. When there is no age difference between the spouses, the short IRA rollover period of two years all but eliminates the compound effect. Therefore, for both the middle and the high taxpayers, the optimal distribution option will be the LSD option when the spouse's life

expectancy is ten years and there is no age difference between the spouses.

The IRA rollover period is longer when the age difference between the spouses is five years. But evidently, the difference between the income taxes paid under the LSD and the IRA-INV options for both the middle and the high taxpayers is more than adequate to offset the compound effect that occurs during the IRA rollover period. As a result, the optimal distribution option for both the middle and the high taxpayers is the LSD option when the age difference between the spouses is five years.

Summary

When the taxpayer elects distribution at the age of 65 and dies two years after retirement, the optimal distribution option varies depending on the taxpayer profile, the spouse's life expectancy, the age difference between the spouses, and the plan variables. In addition, one or a combination of the following factors influence the optimal distribution option: (1) the tax advantage of the LSD option over the IRA-INV option, (2) the difference between the investment and the IRA earnings rates, (3) the difference between the investment and the annuity earnings rates, (4) the fact that income taxes are paid immediately on the earnings from the LSD investments, but the earnings from the IRA fund are not taxed until the IRA fund is distributed, (5) the length of the IRA rollover period, (6) the length of the

annuity distribution period, (7) whether a joint or a single annuity is issued, and (8) whether the distribution from the IRA fund had commenced before both spouses had died.

Taxpayer's Life Expectancy Of Ten Years

The results for a taxpayer who elects distribution at the age of 65 and dies ten years after retirement are presented in Table IX. As can be observed in Table IX, the optimal distribution option varies with the taxpayer profile category (e.g., the optimal distribution option for the low taxpayer is the IRA-INV option when the spouse's life expectancy is two years, but the optimal distribution option for the high taxpayer is the LSD option). The optimal distribution option also varies within the taxpayer profiles based on the life expectancy of the spouse (e.g., for the low taxpayer the optimal distribution option is the IRA-INV option when the spouse's life expectancy is either two years or ten years, but shifts to the IRA-100 option when the spouse's life expectancy is 20 years).

Also, the optimal distribution option varies depending on whether the employee has made contributions (0 or 12 percent) to the retirement plan. However, neither the percentage of the pre-1974 contributions (0 or 25 percent) nor the percentage of the other assets owned by the spouse (0 or 50 percent) appears to change the optimal distribution option.

TABLE IX

TAXPAYER ELECTS DISTRIBUTION AT THE AGE OF 65
TAXPAYER'S LIFE EXPECTANCY IS 10 YEARS

Spouse's Life Expectancy	Low Taxpayer	Middle Taxpayer	High Taxpayer
2	IRA-INV	IRA-INV ¹ /LSD ²	LSD
10	IRA-INV	IRA-INV ¹ /LSD ²	LSD
20	IRA-100	IRA-100	IRA-100

¹IRA-INV if the taxpayer has nondeductible contributions to the retirement plan.

²LSD if the taxpayer did not have any nondeductible contributions to the retirement plan.

LSD = Lump-sum distribution

IRA-INV = Rolled over into an IRA and the after income tax lump-sum distribution from the IRA at the required distribution date is invested

IRA-100 = Rolled over into an IRA and at the required distribution date the IRA balance is used to acquire a joint annuity with 100 percent of the taxpayer's annual annuity receipts continuing to be paid to the spouse after the taxpayer's death

Spouse's Life Expectancy Of Two Years

Low Taxpayer. When the taxpayer's life expectancy is ten years, the election of the IRA-AN option results in an annuity distribution period of only four years. This short annuity distribution period indicates that a portion of the annuity premiums paid (i.e., the IRA balance) would not be recovered prior to the taxpayer's death. This relatively short annuity distribution period substantially reduces the amount available to the beneficiaries. However, if the IRA-INV option is elected, the entire after tax amount of the IRA is available to be bequeathed to the beneficiaries. Therefore, when the annuity distribution period is short, the IRA-INV option will probably be preferred to the IRA-AN options.

Even though the annuity distribution period is longer if either of the AN options were selected instead of the IRA-AN options, there still is a significant difference between the taxpayer's life expectancy (ten years) and the projected life expectancy for the annuity contract (17 years). This life expectancy difference appears to be sufficient to result in a smaller amount being available to the beneficiaries if the AN options were elected than if either the IRA-INV option or the LSD option was elected.

For the low taxpayer, the investment earnings rate is assumed to be six percent, but the IRA earnings rate is assumed to be eight percent. This rate difference results in more earnings accumulating during the IRA rollover period

if the IRA option is elected instead of the LSD option. The IRA option has another advantage in that the amount invested in the IRA is before income taxes but for the LSD option the investment is after income taxes. For the low taxpayer, it appears that the larger amount invested and the greater earnings rate available under the IRA option are sufficient to overcome the greater amount of income taxes that is required to be paid if the IRA-INV option is elected rather than the LSD option. As a result, the optimal distribution option is the IRA-INV option for a low taxpayer with a life expectancy of ten years provided that the spouse's life expectancy is two years.

Middle Taxpayer. When the taxpayer's life expectancy is ten years, the actual annuity distribution period is less than the projected life expectancy of the annuity contract. This is true whether the AN options or the IRA-AN options are elected. As discussed previously, the shorter life expectancy causes a lower effective rate of return for the annuity which subsequently causes both the AN options and the IRA-AN options to be less desirable than either the LSD option or the IRA-INV option.

When an employee has made nondeductible contributions (12 percent) to the retirement plan, 12 percent of the total distribution from the plan is not subject to income taxes upon distribution because the contributions are taxed in the year that they are made. This will reduce the amount of income taxes paid when the retirement fund is distributed.

which in turn, will increase the after tax amount available for investment. The difference between the amount available for investment due to the employee contribution factor will be greater when the IRA-INV option is elected because, as mentioned earlier, the tax rate is higher under the IRA-INV option than under the LSD option (See Exhibit 2). It appears that the greater variability between the amounts invested as a result of the employee contribution factor causes the IRA-INV option to be the optimal distribution option provided that the employee has made nondeductible employee contributions. But, if the employee has not made any nondeductible contributions, the small variability (See Exhibit 2) results in the LSD option being preferred.

EXHIBIT 2

INCREASE IN AMOUNT AVAILABLE FOR INVESTMENT AS THE RESULT OF A 12% EMPLOYEE CONTRIBUTION

Option	Pre-1974 Contribution	
	0%	25%
LSD	\$ 3,551.20	\$ 4,495.60
IRA-INV	10,234.70	10,234.70

Note: When the employee has pre-1974 contributions (25 percent), there may be less variability between the LSD option and the IRA-INV option. However, when the employee

has both nondeductible contributions and pre-1974 contributions, the difference between the amount bequeathed to the beneficiaries for these two options is only \$255.

High Taxpayer. Two major factors appear to result in the LSD option being preferred over the IRA-INV option. First, the earnings rate for the LSD investments is higher than the earnings rate for the IRA option (nine vs. eight percent). In addition, because of the high income tax bracket of the taxpayer, the ten-year averaging method, which is available if the LSD option is elected, causes a reduction in the effective tax rate which results in less income taxes being paid than if the IRA-INV option (regular income averaging method) is elected. The combination of reduced income taxes and a higher earnings rate lead to the LSD option being the optimal distribution option for the high taxpayer with a life expectancy of ten years when the spouse has a life expectancy of two years.

Spouse's Life Expectancy Of Ten Years

When the taxpayer lives as long or longer than the spouse, a change in the spouse's life expectancy will not influence the outcome. Thus, the shift in the spouse's life expectancy in this case does not result in any change in the optimal distribution option (See Table IX). Therefore, the discussion regarding the optimal distribution option above still applies.

Spouse's Life Expectancy Of Twenty Years

However, when the spouse's life expectancy becomes 20 years, the life expectancy of the longest living spouse increases from ten years to 20 years. This increase in the spouse's life expectancy appears to influence the optimal distribution option.

The longer annuity distribution period and the fact that the implied earnings rate of the annuity is higher than the investment earnings rate, seem to infer that the annuity options are preferred over either the LSD option or the IRA-INV option. Because of the accumulated earnings during the IRA rollover period, the amount of premiums paid for the annuity is greater for the IRA-AN options than for the AN options. The larger premium will result in greater annual annuity receipts, which in turn, permits more savings to accumulate. Because of the larger accumulated savings over the annuitants' lives under the IRA-AN options, these options are preferred to the AN options.

The taxpayer may elect either the IRA-50 option or the IRA-100 option at the required IRA distribution date. If the taxpayer selects the IRA-50 option, the annuity receipts will be greater than the amount received under the IRA-100 option while the taxpayer is alive, but will be less than the amount received under the IRA-100 option after the taxpayer dies. For the situation in which the taxpayer's life expectancy is ten years and the spouse's life expectancy is 20 years, the election of the IRA-50 option

instead of the IRA-100 option will result in larger receipts for a period of four years, but smaller receipts for a period of ten years. It appears that the slightly lower but constant receipts under the IRA-100 option over the annuity distribution period of 14 years cause larger total receipts and thus greater accumulated savings than under the IRA-50 option. Therefore, the IRA-100 option is the optimal distribution option for the taxpayer when the spouse's life expectancy is 20 years.

Summary

For the taxpayer who elects distribution at the age of 65 and dies ten years following retirement, the optimal distribution option varies depending on the taxpayer profile, the spouse's life expectancy and the employee contribution factor. Also, the first six of the eight factors discussed in the summary for Table VIII influence the optimal distribution option. In addition, the following factors affect the optimal distribution option: (1) which spouse (i.e., taxpayer or spouse) is the last spouse to die and (2) the differences in the amount of the annuity receipts between the IRA-100 option and the IRA-50 option.

Taxpayer's Life Expectancy Of Twenty Years

Table X shows the optimal distribution options for a taxpayer who elects distribution at the age of 65 and lives

20 years following retirement. The optimal distribution option varies as the spouse's life expectancy changes (e.g., the optimal distribution option is the IRA-AN option if the spouse's life expectancy is two years, but is the IRA-50 option if the spouse's life expectancy is either ten years or 20 years). However, the taxpayer profile, the plan variables, and the percentage of the other assets owned by the spouse do not appear to influence the optimal distribution option.

Spouse's Life Expectancy Of Two Years

As discussed previously, the accumulation of interest in the IRA fund during the rollover period causes the annual annuity receipts to be larger for the IRA-AN options than for the AN options. Thus, the IRA-AN options are normally preferred to the AN options for a taxpayer with a life expectancy that exceeds the IRA rollover period.

With a life expectancy of 20 years, the annuity distribution period is sufficient to allow the taxpayer to not only recover the cost of the annuity (i.e., the IRA balance) but also to receive earnings from the annuity. The implied annuity earnings rate of 11 percent is greater than the investment earnings rate (six, eight, or nine percent). The longer the annuity distribution period the more likely the difference in the earnings rates will indicate the selection of the IRA-AN options over the IRA-INV option. In addition, the earnings rate advantage of the annuity option, that occurs when the annuity distribution period is

TABLE X

TAXPAYER ELECTS DISTRIBUTION AT THE AGE OF 65
TAXPAYER'S LIFE EXPECTANCY IS 20 YEARS

Spouse's Life Expectancy	Low Taxpayer	Middle Taxpayer	High Taxpayer
2	IRA-AN	IRA-AN	IRA-AN
10	IRA-50	IRA-50	IRA-50
20	IRA-50	IRA-50	IRA-50

IRA-AN = Rolled over into an IRA and at the required distribution date the IRA balance is used to acquire a single life annuity

IRA-50 = Rolled over into an IRA and at the required distribution date the IRA balance is used to acquire a joint annuity with 50 percent of the taxpayer's annual annuity receipts to be paid to the spouse after the taxpayer's death

relatively long, appears to be sufficient to counteract the income tax advantage of the LSD option.

When the spouse's life expectancy is two years, the spouse will not be surviving at the required IRA distribution date. Therefore, at the required distribution date, the taxpayer can elect either the IRA-INV option or a single life annuity (IRA-AN option). As mentioned above, the relatively long annuity distribution period will favor the IRA-AN option over the IRA-INV option. Therefore, the optimal distribution option for a taxpayer with a life expectancy of 20 years is the IRA-AN option when the spouse's life expectancy is two years.

Spouse's Life Expectancy Of Ten Years
And Twenty Years

However, when the spouse's life expectancy is either ten years or 20 years, the spouse will be alive at the required IRA distribution date. Therefore, at the required IRA distribution date, the decision facing the taxpayer is whether to elect the IRA-100 option, the IRA-50 option or the IRA-INV option. The relatively long annuity distribution period results in the annuity options being preferred over the IRA-INV option.

As discussed earlier, the annual annuity receipts under the IRA-50 option will be greater than under the IRA-100 option while the taxpayer is alive, but will be less than the amount received under the IRA-100 option if the

spouse survives the taxpayer. When the taxpayer's life expectancy is 20 years and the spouse's life expectancy is either ten years or 20 years, the spouse will not survive the taxpayer. Therefore, the IRA-50 option will be preferred to the IRA-100 option because the larger annual annuity receipts will generate more savings and thus, a larger amount will be available for the beneficiaries. As a consequence, the optimal distribution option is the IRA-50 option for a taxpayer with a 20-year life expectancy when the spouse's life expectancy is either ten years or 20 years.

Summary

When the taxpayer elects distribution at the age of 65 and lives 20 years after retirement, the optimal distribution option varies due to the spouse's life expectancy. The length of the spouse's life expectancy determines whether a joint or a single annuity is issued at the required IRA distribution date. The following factors also influence the optimal distribution option: (1) the difference between the investment and the annuity earnings rates (2) the length of the annuity distribution period and (3) the accumulation of interest in the IRA during the rollover period.

Distribution At The Age Of 65--Without

The IRA Option

When the taxpayer elects distribution at the age of

65, the decision in effect involves two steps. First, the taxpayer has to decide if the income from the retirement plan is needed immediately or whether the funds can be rolled over into an IRA. If the income is needed immediately, the taxpayer then has to decide whether to elect a lump-sum distribution (LSD), an annuity with 100 percent payments continuing to the spouse (AN-100), or an annuity with 50 percent payments continuing to the spouse (AN-50).

However, when the taxpayer does not need the income presently, the taxpayer's decision is based on the above options plus the option to roll over the funds into an IRA. At the required distribution date for the IRA, the taxpayer then can decide whether the IRA fund should be taken as a lump-sum distribution (IRA-INV), or as an annuity with 100 percent payments continuing to the spouse (IRA-100), or as an annuity with 50 percent payments continuing to the spouse (IRA-50). Because of the two-step decision making process, this research will examine in this section the decision in which the taxpayer needs the income from the retirement plan immediately. Previously, this research examined the decision in which the taxpayer also can elect the option to roll over the retirement fund into an IRA.

Taxpayer's Life Expectancy Of Two Years

Table XI summarizes the results for the taxpayer, who dies two years following retirement, based on the taxpayer

profile and the spouse's life expectancy. As can be observed in Table XI, the optimal distribution option varies depending on the taxpayer profile (e.g., when the spouse's life expectancy is 20 years, the optimal distribution option for the low and the middle taxpayers is the AN-100 option, but becomes the LSD option for the high taxpayer). The optimal distribution option also varies within each taxpayer profile according to the spouse's life expectancy (e.g., for the low taxpayer, the optimal distribution option is the LSD option if the spouse's life expectancy is two years or ten years but changes to the AN-100 option if the spouse's life expectancy is 20 years). However, the optimal distribution decision is not affected by the plan variables or the percentage of the other assets owned by the spouse.

Spouse's Life Expectancy Of Two Years

As discussed previously, when both the taxpayer and the spouse die soon after retirement, most of the balance from the retirement plan is not recovered if either the AN-100 option or the AN-50 option is elected. Because of the short annuity distribution period (two years), the amount of the annuity receipts from either the AN-100 option or the AN-50 option is substantially less than the amount of the lump-sum distribution after income taxes. Therefore, the optimal distribution option is the LSD option for a taxpayer with a life expectancy of two years provided that the spouse's life expectancy is also two years.

TABLE XI
TAXPAYER ELECTS DISTRIBUTION AT THE
AGE OF 65--WITHOUT IRA OPTION
TAXPAYER'S LIFE EXPECTANCY
IS 2 YEARS

Spouse's Life Expectancy	Low Taxpayer	Middle Taxpayer	High Taxpayer
2	LSD	LSD	LSD
10	LSD	LSD	LSD
20	AN-100	AN-100	LSD

LSD = Lump-sum distribution

AN-100 = A joint annuity with 100 percent of the taxpayer's annual annuity receipts continuing to be paid to the spouse after the taxpayer's death

Spouse's Life Expectancy Of Ten Years

Remember that for annuity options the amount saved each year is the after tax annuity receipts minus the taxpayer's consumption expenditures. With the short life of the taxpayer following retirement (two years), the AN-100 option, which continues the same amount of annuity receipts to the spouse after the taxpayer's death, will result in greater savings than the AN-50 option during the annuity distribution period.

The total amount saved under the AN-100 option over the annuity distribution period of ten years (i.e., approximately \$40,000, low taxpayer; \$73,000, middle taxpayer; or \$141,000, high taxpayer) is less than the after tax amount invested under the LSD option (i.e., \$61,000, low; \$117,000, middle; or \$216,000, high). Therefore, the LSD option gives rise to a larger amount to be bequeathed to the beneficiaries than under the AN-100 option. As a result, the optimal distribution option for the taxpayer with a two-year life expectancy whose spouse has a ten-year life expectancy is the LSD option.

Spouse's Life Expectancy Of Twenty Years

Low Taxpayer And Middle Taxpayer. However, when the annuity distribution period is 20 years instead of ten years, the total amount saved under the AN-100 option increases to approximately \$80,000 for the low taxpayer and to approximately \$146,000 for the middle taxpayer. The total

amount saved under the AN-100 option is substantially greater than the maximum amount available for investment under the LSD option of \$64,339 for the low taxpayer and \$124,525 for the middle taxpayer. Thus, the AN-100 option will generate a larger amount to be available for the beneficiaries than is available under the LSD option. Therefore, when the spouse's life expectancy is 20 years, the optimal distribution option for the low taxpayer or the middle taxpayer with a life expectancy of two years is the AN-100 option.

High Taxpayer. The total amount saved under the AN-100 option over the annuity distribution period of 20 years (i.e., approximately \$282,000) is greater than the maximum amount available for investment under the LSD option (i.e., \$230,255). But, under the LSD option, the entire after income tax amount is available for investment over the combined lives of the taxpayer and the spouse. However, under the AN-100 option, only approximately \$14,000 is saved each year. Thus, it is only in the spouse's later years that the AN-100 option savings will exceed the amount invested under the LSD option. It appears that the accumulated earnings from the larger investment under the LSD option during the early retirement years are sufficient to counteract the larger total receipts in the later years of the spouse's life. Therefore, for the high taxpayer with a life expectancy of two years, the optimal distribution

option is the LSD option when the spouse's life expectancy is 20 years.

Summary

If at the age of 65 the taxpayer's financial position does not permit the election of the IRA option, the optimal distribution option varies depending on the taxpayer profile and the spouse's life expectancy provided that the taxpayer lives only two years after retirement. In addition, the following factors influence the optimal distribution decision: (1) whether or not the taxpayer is the last spouse to die, (2) the difference in the total amount of receipts under the AN-100 option and under the AN-50 option over the annuity distribution period and (3) the difference in the amount invested each year depending on whether the LSD option or an annuity option is elected.

Taxpayer's Life Expectancy Of Ten Years

Table XII shows the results for a taxpayer who lives to the age of 75 but whose financial position prevents the election of a roll over into an IRA. The optimal distribution option varies with the taxpayer profile category (e.g., when the spouse's life expectancy is 20 years, the optimal distribution option is the AN-100 option for the low and the middle taxpayers, but changes to the LSD option for the high taxpayer). In addition, the optimal distribution option varies as the spouse's life expectancy changes (e.g., for

TABLE XII
 TAXPAYER ELECTS DISTRIBUTION AT THE
 AGE OF 65--WITHOUT IRA OPTION
 TAXPAYER'S LIFE EXPECTANCY
 IS 10 YEARS

<u>Spouse's Life Expectancy</u>	<u>Low Taxpayer</u>	<u>Middle Taxpayer</u>	<u>High Taxpayer</u>
2	LSD	LSD	LSD
10	LSD	LSD	LSD
20	AN-100	AN-100	LSD

LSD = Lump-sum distribution

AN-100 = A joint annuity with 100 percent of the taxpayer's annual annuity receipts continuing to be paid to the spouse after the taxpayer's death

the low taxpayer the optimal distribution option is the LSD option when the spouse's life expectancy is ten years, but shifts to the AN-100 option when the spouse's life expectancy is 20 years). However, the plan variables and the percentage of the other assets owned by the spouse appear not to affect the optimal distribution option.

Spouse's Life Expectancy Of Two Years

Even though the spouse's life expectancy is two years, the annuity distribution period is ten years because the taxpayer has a ten-year life expectancy. When the taxpayer lives longer than the spouse, the annuity option which generates the greatest amount saved and available for the beneficiaries is the AN-50 option.

However, the total amount saved under the AN-50 option during the annuity distribution period (i.e., approximately \$44,000, low; \$81,000, middle; or \$151,000, high) is less than the after income tax amount invested under the LSD option (i.e., \$61,000, low; \$117,000, middle; or \$216,000, high). Therefore, the LSD option results in a larger amount being available to the beneficiaries than under the AN-50 option. For this reason, the optimal distribution option is the LSD option for a taxpayer with a ten-year life expectancy whose spouse has a two-year life expectancy.

Spouse's Life Expectancy Of Ten Years

The change in the spouse's life expectancy from two

years to ten years does not modify the annuity distribution period. Since the annuity distribution period remains at ten years, the above discussion on the optimal distribution option still applies (See Table XII).

Spouse's Life Expectancy Of Twenty Years

Low Taxpayer And Middle Taxpayer. When the taxpayer's life expectancy is less than the spouse's life expectancy, the annuity option which generates the largest amount saved is normally the AN-100 option. Since the spouse survives the taxpayer when the spouse's life expectancy is 20 years and the taxpayer's life expectancy is ten years, the AN-100 option is preferred over the AN-50 option.

The total amount saved under the AN-100 option during the annuity distribution period is approximately \$79,000 for the low taxpayer and is approximately \$146,000 for the middle taxpayer. But the maximum amount of the after income tax investment under the LSD option is \$64,339 and \$124,525 for the low and the middle taxpayers, respectively. In this case, the AN-100 option results in a larger amount to be bequeathed to the beneficiaries than under the LSD option. As a result, the optimal distribution option for the low and the middle taxpayers is the AN-100 option provided that the spouse's life expectancy is 20 years.

High Taxpayer. In this situation, the difference between the total amount saved under the AN-100 option over the annuity distribution period (i.e., \$282,000) and the

maximum amount available for investment under the LSD option (i.e., \$230,255) is relatively small. As previously mentioned, the amount invested over the spouses' lives under the LSD option is the entire after income tax amount, but under the AN-100 option, only approximately \$14,000 is saved each year. The total amount saved under the AN-100 option will exceed the amount invested under the LSD option only during the spouse's later years. Apparently, the accumulated earnings from the larger investment under the LSD option during the taxpayer's early years of retirement are large enough to compensate for the larger total receipts in the spouse's later years. Therefore, for the high taxpayer with a life expectancy of ten years the optimal distribution option is the LSD option provided that the spouse's life expectancy is 20 years.

Summary

For the taxpayer whose financial position prevents the selection of the IRA option at the age of 65, the optimal distribution option varies depending on the taxpayer profile and the spouse's life expectancy when the taxpayer dies ten years after retirement. The factors previously discussed under the case in which the taxpayer's life expectancy is two years also influence the optimal distribution decision of a taxpayer with a ten-year life expectancy.

Taxpayer's Life Expectancy Of Twenty
Years

The results for a taxpayer who lives to the age of 85 but whose financial position prevents the election of the IRA option are presented in Table XIII. As can be seen in Table XIII, the optimal distribution option is the same regardless of the taxpayer profile category, the spouse's life expectancy variables, or the plan variables.

Recall that while the taxpayer is alive the receipts under the AN-50 option are greater than the receipts under the AN-100 option. Since the taxpayer lives as long or longer than the spouse when the taxpayer's life expectancy is 20 years, the total amount received and saved will be greater under the AN-50 option than under the AN-100 option.

As presented earlier, the implied earnings rate is greater than the investment earnings rate. When the taxpayer has a life expectancy of 20 years, the actual annuity distribution period is greater than the projected annuity distribution period. This longer annuity distribution period is sufficient to allow the taxpayer to not only recover the cost of the annuity (i.e., the retirement fund balance) but also to receive earnings from the annuity. As a result, the AN-50 option will give rise to greater earnings over the life of the taxpayer than under the LSD option. It appears that the additional earnings are sufficient to counterbalance the potential income tax advantage of the LSD option. Therefore, the AN-50 option is the optimal distribution

TABLE XIII
 TAXPAYER ELECTS DISTRIBUTION AT THE
 AGE OF 65--WITHOUT IRA OPTION
 TAXPAYER'S LIFE EXPECTANCY
 IS 20 YEARS

<u>Spouse's Life Expectancy</u>	<u>Low Taxpayer</u>	<u>Middle Taxpayer</u>	<u>High Taxpayer</u>
2	AN-50	AN-50	AN-50
10	AN-50	AN-50	AN-50
20	AN-50	AN-50	AN-50

AN-50 = A joint annuity with 50 percent of the taxpayer's annual annuity receipts continuing to be paid to the spouse after the taxpayer's death

option for a taxpayer who has a life expectancy of 20 years but who is unable to elect the IRA option.

Summary

The optimal distribution option is the AN-50 option when the taxpayer lives to the age of 85 but is unable to elect the IRA option. The taxpayer profile, the spouse's variables and the plan variables do not affect the optimal distribution option. But, the following factors influence the optimal distribution decision: (1) the length of the annuity distribution period, (2) whether or not the taxpayer is the final spouse to die, (3) the difference between the amount of receipts under the AN-50 option and under the AN-100 option over the annuity distribution period, and (4) the difference between the investment and annuity earnings rates.

Distribution At The Age Of 70 1/2

At the age of 65 the taxpayer may elect to start distribution from the retirement plan immediately or may postpone starting the distribution until the age of 70 1/2. The age that the taxpayer selects for the distribution of the retirement fund may influence the optimal distribution decision. For example, if the distribution is delayed until the age of 70 1/2, the taxpayer may no longer elect the IRA option because the IRA fund is also required to start distribution by the age of 70 1/2. Because of the potential effect on the optimal distribution option of the different

ages at distribution, this research has examined the distributions at the age of 65 and will now examine the distributions at the age of 70 1/2.

Taxpayer's Life Expectancy Of Ten Years

Table XIV summarizes the results for a taxpayer who elects distribution at the age of 70 1/2 and dies ten years following retirement. The optimal distribution option varies with the taxpayer profile category (e.g., when the spouse's life expectancy is 20 years, the optimal distribution option is the AN-100 option for the low and the middle taxpayers but shifts to the LSD option for the high taxpayer). In addition, the optimal distribution option varies depending on the spouse's life expectancy (e.g., for the low taxpayer the optimal distribution option is the LSD option when the spouse's life expectancy is ten years, but is the AN-100 option when the spouse's life expectancy is 20 years). However, neither the plan variables nor the percentage of the other assets owned by the spouse appears to modify the optimal distribution option.

Spouse's Life Expectancy Of Two Years

Because a spouse with a life expectancy of two years will not be alive when the retirement plan is distributed by the taxpayer at the age of 70 1/2, the annuity option results in the issuance of a single life annuity. But, when the taxpayer's life expectancy is ten years at the

TABLE XIV

TAXPAYER ELECTS DISTRIBUTION AT THE AGE OF 70 1/2
TAXPAYER'S LIFE EXPECTANCY IS 10 YEARS

<u>Spouse's Life Expectancy</u>	<u>Low Taxpayer</u>	<u>Middle Taxpayer</u>	<u>High Taxpayer</u>
2	LSD	LSD	LSD
10	LSD	LSD	LSD
20	AN-100	AN-100	LSD

LSD = Lump-sum distribution

AN-100 = A joint annuity with 100 percent of the taxpayer's annual annuity receipts continuing to be paid to the spouse after the taxpayer's death

age of 65, the annuity distribution period is only four years if the taxpayer elects to postpone distribution until the age of 70 1/2. As discussed previously, the shorter the annuity distribution period the less likely that the cost of the annuity (i.e., the retirement fund balance) will be recovered during the annuity distribution period.

However, if the LSD option is elected, the fund balance is subject to income taxes immediately upon distribution. But, the ten-year income averaging method may be elected when the LSD option is selected. It appears that the unrecovered costs under either the AN-50 option or the AN-100 option are substantially greater than the income taxes paid upon the distribution of the fund balance under the LSD option. As a result, the LSD option is the optimal distribution option for a taxpayer with a life expectancy of ten years whose spouse's life expectancy is two years.

Spouse's Life Expectancy Of Ten Years

Since both the taxpayer and the spouse have a life expectancy of ten years, both spouses will be surviving when the taxpayer reaches the age of 70 1/2. As a result, a joint annuity will be issued (i.e., the AN-50 option or the AN-100 option). Because the spouse does not survive the taxpayer, the annuity option which results in larger annual annuity receipts (the AN-50 option) will be preferred by the taxpayer.

If both spouses have a life expectancy of ten years when the taxpayer is 65 years old, the annuity distribution period is only four years for the taxpayer who elects to postpone distribution until the age of 70 1/2. As previously mentioned, a relatively short annuity distribution period may result in a smaller portion of the cost of the annuity (i.e., the retirement fund balance) being recovered during the annuity distribution period.

As discussed above, it appears that the unrecovered costs under the AN-50 option are substantially greater than the income taxes paid upon the distribution of the fund balance under the LSD option. Therefore, when both spouses have a life expectancy of ten years, the LSD option is the optimal distribution option.

Spouse's Life Expectancy Of Twenty Years

Low Taxpayer And Middle Taxpayer. Even though the annual annuity receipts under the AN-50 option are slightly larger than the receipts under the AN-100 option while the taxpayer is alive (four years), the annual annuity receipts are substantially smaller under the AN-50 option than under the AN-100 option during the period that the spouse survives the taxpayer. In this case, the spouse lives ten years longer than the taxpayer. The reduced receipts under the AN-50 option during the period that the spouse survives the taxpayer (ten years) appear to cause the AN-100 option to have a larger amount available for the beneficiaries than is

available under the AN-50 option. Therefore, the AN-100 option is preferred to the AN-50 option.

Under the AN-100 option the total amount saved during the annuity distribution period is approximately \$125,000 for the low taxpayer and is approximately \$228,000 for the middle taxpayer. The total amount saved under the AN-100 option is greater than the maximum amount available for investment under the LSD option of \$105,654 for the low taxpayer and \$204,390 for the middle taxpayer. Therefore, a larger amount is available for the beneficiaries under the AN-100 option than under the LSD option. As a result, for the low taxpayers and the middle taxpayers who have a life expectancy of ten years, the optimal distribution option is the AN-100 option when the spouse's life expectancy is 20 years.

High Taxpayer. Recall that there is a different amount invested each year under the LSD option than under the AN-100 option. The entire after income tax amount under the LSD option is invested over the remaining lives of the taxpayer and the spouse. However, only approximately \$27,800 is saved each year under the AN-100 option. As previously mentioned, only in the spouse's later years will the amount under the AN-100 option exceed the amount invested under the LSD option. Apparently, the accumulated earnings under the LSD option during the period immediately after distribution are more than adequate to balance out the larger total receipts just prior to the spouse's death under

the AN-100 option. Therefore, the optimal distribution option for the high taxpayer with a life expectancy of 20 years is the LSD option provided that the spouse's life expectancy is 20 years.

Summary

If the taxpayer, who elects distribution at the age of 70 1/2, lives until the age of 75, the optimal distribution option varies depending on the taxpayer profile category and the spouse's life expectancy. Neither the plan variables nor the percentage of the other assets owned by the spouse affects the optimal distribution option. But, the following factors influence the optimal distribution decision: (1) the length of the annuity distribution period, (2) whether or not the taxpayer is the last spouse to die, (3) the difference in the total amount of the receipts under the AN-50 option and under the AN-100 option over the annuity distribution period, and (4) the difference in the amount invested each year depending on whether the LSD option or an annuity option is elected.

Taxpayer's Life Expectancy Of Twenty Years

The results for a taxpayer who elects distribution at the age of 70 1/2 and dies 20 years following retirement are presented in Table XV. The optimal distribution option varies with the taxpayer profile category (e.g., when the

spouse's life expectancy is 20 years, the optimal distribution option is the AN-50 option for the low and the middle taxpayers but shifts to the LSD option for the high taxpayer). In addition, the optimal distribution option varies depending on the spouse's life expectancy (e.g., for the high taxpayer the optimal distribution option is an annuity (AN) if the spouse's life expectancy is two years, but becomes the LSD option if the spouse's life expectancy is either ten years or 20 years).

Further, certain combinations of the plan variables (i.e., employee contributions and pre-1974 contributions) affect the optimal distribution option (e.g., for the high taxpayer whose spouse's life expectancy is ten years, the optimal distribution option is the LSD option except when the taxpayer has neither pre-1974 contributions nor employee contributions). However, the percentage of the other assets owned by the spouse appears not to alter the optimal distribution option.

Spouse's Life Expectancy Of Two Years

Low Taxpayer And Middle Taxpayer. Since the spouse will not be surviving when the retirement plan is distributed if the distribution is postponed until the taxpayer reaches the age of 70 1/2, an annuity option results in a single life annuity (AN) being issued. When the taxpayer's life expectancy is 20 years at retirement, the annuity distribution period (14 years) is sufficient to

TABLE XV

TAXPAYER ELECTS DISTRIBUTION AT THE AGE OF 70 1/2
TAXPAYER'S LIFE EXPECTANCY IS 20 YEARS

<u>Spouse's Life Expectancy</u>	<u>Low Taxpayer</u>	<u>Middle Taxpayer</u>	<u>High Taxpayer</u>
2	AN	AN	AN ¹
10	AN-50	AN-50	LSD ²
20	AN-50	AN-50	LSD ²

¹LSD if the taxpayer has made no contributions to the retirement plan but has pre-1974 contributions.

²AN-50 if the taxpayer has made neither pre-1974 contributions nor nondeductible contributions to the retirement plan.

LSD = Lump-sum distribution

AN = A single life annuity

AN-50 = A joint annuity with 50 percent of the taxpayer's annual annuity receipts being paid to the spouse after the taxpayer's death

permit the taxpayer to not only recover the cost of the annuity (i.e., the retirement fund balance) but also to receive earnings from the annuity.

The implied annuity earnings rate for a single life annuity of 11 percent is greater than the investment earnings rate (six percent or eight percent). As previously mentioned, the longer the annuity distribution period the more likely the difference in the earnings rates will favor the AN option over the LSD option. It appears that the annuity distribution period of 14 years is long enough for the earnings rate advantage of the AN option to counteract the income tax advantage of the LSD option. Consequently, the optimal distribution option for a low taxpayer or a middle taxpayer with a 20-year life expectancy and whose spouse has a two-year life expectancy is the AN option.

High Taxpayer. The optimal distribution option for the high taxpayer changes depending on the plan variables (i.e., employee contributions and pre-1974 contributions). As discussed previously, the portion of the retirement fund contributed by the employee as nondeductible contributions is not subject to income taxes at distribution because the income taxes were incurred when the employee's contributions were made. If the taxpayer elects an annuity, the portion of the retirement fund that the taxpayer had contributed is used to calculate the taxpayer's exclusion ratio in determining the taxable portion of each annuity receipt. Therefore, it is expected that the after income tax annuity

receipts will be greater for a taxpayer who has employee contributions. This in turn, will result in a greater total accumulated savings available for the beneficiaries.

The annuity distribution period of 14 years apparently is sufficient to allow for the AN option to have an earnings rate advantage (11 vs. nine percent) over the LSD option. The combined effect of the exclusion ratio and the earnings rate advantage of the AN option is more than enough to offset the income tax advantage of the ten-year averaging method available under the LSD option. Therefore, for a high taxpayer who has employee contributions but no pre-1974 contributions, the optimal distribution option is the AN option when the taxpayer's life expectancy is 20 years and the spouse's life expectancy is two years.

But, when the taxpayer has pre-1974 contributions, the taxpayer may elect to treat the pre-1974 portion of the retirement fund balance as a capital gain if the LSD option is selected. The treatment of the pre-1974 contributions as a capital gain is expected to result in less income taxes being incurred than if only the ten-year averaging method is elected. This subsequently will result in a greater after income tax amount to be invested. However, it appears that the combined effect of the exclusion ratio and the earnings rate advantage of the AN option is just sufficient to counteract the income tax advantage of the capital gain treatment in combination with the ten-year averaging method.

Note: For the high taxpayer with both employee

contributions and pre-1974 contributions, the detailed output indicates that there is less than a \$1,000 difference between the AN option and the LSD option when the amount bequeathed to the beneficiaries is over \$1,700,000 or over \$2,000,000 depending on the percentage of the other assets owned by the spouse.

If the taxpayer has no employee contributions, the entire annual annuity receipts will be subject to income taxes (i.e., there is no exclusion ratio) which will result in less accumulated savings available to the beneficiaries than if there were employee contributions. Apparently, the earnings rate advantage of the AN option alone is adequate enough to offset the income tax advantage of the ten-year averaging method available under the LSD option. As a result, when the high taxpayer's life expectancy is 20 years and the spouse's life expectancy is two years, the optimal distribution option is the AN option for the high taxpayer who has neither employee contributions nor pre-1974 contributions.

As previously mentioned, if there are pre-1974 contributions, the expected outcome is that there will be less income taxes paid and, thus, there will be greater accumulated savings than if the employee had no pre-1974 contributions. Evidently, the income tax advantage of the capital gain treatment along with the ten-year averaging method under the LSD option more than compensate for the earnings rate advantage of the AN option when there is no

exclusion ratio. Therefore, when the high taxpayer has pre-1974 contributions but no employee contributions, the optimal distribution option is the LSD option when the taxpayer has a life expectancy of 20 years and whose spouse has a life expectancy of two years.

Spouse's Life Expectancy Of Ten Years
And Twenty Years

Low Taxpayer And Middle Taxpayer. When the spouse's life expectancy is either ten years or 20 years, the spouse will be surviving at the required distribution date (i.e., when the taxpayer is 70 1/2 years old). Therefore, at the required distribution date, the decision facing the taxpayer is whether to select the AN-100 option, the AN-50 option or the LSD option. The earnings rate advantage of the annuity options because of the relatively long annuity distribution period of 14 years seemingly results in these options being preferred over the LSD option.

As mentioned earlier, the annual annuity receipts under the AN-50 option will be greater than the receipts under the AN-100 option while the taxpayer is alive. Since the taxpayer lives as long or longer than the spouse when the taxpayer's life expectancy is 20 years and the spouse's life expectancy is either ten years or 20 years, the total amount received and saved will be greater under the AN-50 option than would be available under the AN-100 option. Thus, for the low taxpayer or the middle taxpayer with a

life expectancy of 20 years, the optimal distribution option is the AN-50 option when the spouse has a life expectancy of either ten years or 20 years.

High Taxpayer. When a joint annuity is issued, which is the case when the spouse's life expectancy is either ten years or 20 years, instead of a single life annuity, the implied earnings rate drops to ten percent. For the high taxpayer, even though the earnings rate advantage (ten vs. nine percent) will exist because of the relatively long annuity distribution period of 14 years, its advantage is not as great as it would be if a single life annuity had been issued. Evidently, the earnings rate advantage of the AN-50 option is not large enough to offset the income tax advantage of the LSD option if there were pre-1974 contributions. Therefore, the optimal distribution option is the LSD option for the high taxpayer who has pre-1974 contributions and a life expectancy of 20 years when the spouse's life expectancy is either ten years or 20 years.

In the situation in which the high taxpayer has made employee contributions but no pre-1974 contributions, less income taxes are paid than if there were no employee contributions. This occurs because the portion of the fund related to the employee contributions is not subject to income taxes since they were subject to income taxes when the contributions were made by the employee. However, the amount of the reduction in income taxes paid because of the employee contributions (12 percent) in the cases being

investigated is less than the reduction in income taxes paid because of the pre-1974 contributions (25 percent). It appears that the income tax advantage of the LSD option is still barely sufficient to counterbalance the earnings rate advantage of the AN-50 option.

Note: For the high taxpayer who has made employee contributions but has no pre-1974 contributions, the detailed output indicates that there is approximately a \$1,000 difference between the AN-50 option and the LSD option when the amount bequeathed to the beneficiaries is over \$1,700,000 or over \$2,000,000 depending on the percentage of the other assets owned by the spouse.

However, when the high taxpayer has neither employee contributions nor pre-1974 contributions, the income taxes paid are greater than if the taxpayer had either type of contribution. It seems that the advantage of reduced income taxes of the LSD option is not quite adequate enough to counteract the earnings rate advantage of the AN-50 option.

Note: For the high taxpayer who has neither employee contributions nor pre-1974 contributions, the detailed output indicates that there is about a \$500 difference between the AN-50 option and the LSD option when the amount bequeathed to the beneficiaries is over \$1,700,000 or over \$2,000,000 depending on the percentage of the other assets owned by the spouse.

Summary

If the taxpayer, who elects distribution at the age of 70 1/2, lives until the age of 85, the optimal distribution option varies depending on the taxpayer profile category, the spouse's life expectancy, and the plan variables. However, the percentage of the other assets owned by the spouse does not affect the optimal distribution option. But, the following factors influence the optimal distribution decision: (1) the length of the annuity distribution period, (2) whether or not the taxpayer is the last spouse to die, (3) the difference between the investment and the annuity earnings rates, and (4) the difference in the total amount of receipts under the AN-100 option and under the AN-50 option over the annuity distribution period.

Spouse Elects Distribution After Taxpayer's Death

In the situation in which the taxpayer elects to postpone distribution until the age of 70 1/2 but dies at the age of 67 (i.e., an expected life of two years), the spouse will have to select the distribution option related to the taxpayer's retirement fund balance. The optimal distribution option may vary depending on which spouse selects the distribution option. For example, if the taxpayer elects to take an annuity when the spouse is alive, the taxpayer has to decide whether to take the AN-50 option or the AN-100 option; but, if the spouse elects an annuity,

it is assumed to be a single life annuity. Because the optimal distribution option may be different depending on which spouse elects distribution, this research previously examined the distribution options elected by the taxpayer and now will examine the distribution options selected by the spouse.

Spouse's Life Expectancy Of Two Years

When the taxpayer elects to postpone distribution until the age of 70 1/2, the taxpayer's retirement fund balance remains in the retirement plan. For the situation in which both spouses die before the taxpayer reaches the age of 70 1/2 (i.e., when both the taxpayer and the spouse have a two-year life expectancy), the fund balance is still in the retirement plan and, as a result, the taxpayer's balance will be distributed to the beneficiaries.

Spouse's Life Expectancy Of Ten Years

Table XVI summarizes the results when the spouse selects the distribution option. The optimal distribution option varies with the spouse profile category (e.g., when the spouse's life expectancy is 20 years and the age difference between the spouses is ten years, the optimal distribution option is the IRA-AN option for the middle spouse but changes to the LSD option for the high spouse). In addition, the optimal distribution option varies depending on the spouse's life expectancy (e.g., for the low

TABLE XVI
TAXPAYER ELECTS DISTRIBUTION AT THE AGE OF 70 1/2
TAXPAYER'S LIFE EXPECTANCY IS 2 YEARS

Taxpayer Spouse's Life Expectancy	Low			Middle			High		
	Age Difference Between Spouses			Age Difference Between Spouses			Age Difference Between Spouses		
	0	5	10	0	5	10	0	5	10
2	Plan ¹	Plan ¹	Plan ¹	Plan ¹	Plan ¹	Plan ¹	Plan ¹	Plan ¹	Plan ¹
10	LSD	LSD ²	IRA	LSD	LSD	IRA	LSD	LSD	IRA
20	AN	IRA-AN	IRA-AN	AN	IRA-AN	IRA-AN	AN	IRA-AN	LSD

¹Since the taxpayer elected to postpone distribution until the age of 70 1/2, the qualified retirement plan balance has not been distributed prior to the death of both the taxpayer and the spouse.

²If the taxpayer has nondeductible contributions to the retirement plan but has no pre-1974 contributions, the difference between the LSD option and the IRA-INV option is only \$12.20.

LSD = Lump sum distribution

AN = A single life annuity

IRA = Rolled over into an IRA

IRA-AN = Rolled over into an IRA and at the required distribution date the IRA balance is used to acquire a single life annuity

spouse the optimal distribution option is the LSD option when there is a life expectancy of ten years and there is no age difference between the spouses, but the optimal distribution option becomes the AN option when there is a life expectancy of 20 years and again there is no age difference between the spouses).

Further, the optimal distribution option also varies with the age difference between the spouses (e.g., for the high spouse who has a life expectancy of 20 years, the optimal distribution option is the IRA-AN option if there is a five-year age difference between the spouses, but the optimal distribution option shifts to the LSD option when there is a ten-year age difference between the spouses). However, it appears that the percentage of the other assets owned by the spouse does not influence the optimal distribution option.

Low Spouse

No Age Difference Between Spouses. When there is no age difference between the spouses, it is assumed that the financial position of the spouse is such that the option of rolling the retirement fund over to an IRA is not possible. Therefore, the spouse has to decide between the LSD option and the AN option. As discussed previously, the shorter the annuity distribution period the less likely that the cost of the annuity (the retirement fund balance) will be recovered. It appears that the annuity distribution period of eight

years (the spouse's life expectancy of ten years minus the taxpayer's life expectancy of two years) results in a greater loss from unrecovered costs than the income taxes paid under the LSD option. Therefore, when the low spouse has a life expectancy of ten years and there is no age difference between the spouses, the optimal distribution option is the LSD option.

Age Difference Between Spouses Of Five Years. If the age difference between the spouses is five years or ten years, it is assumed that the spouse will consider rolling the retirement fund balance over to an IRA (i.e., IRA-AN option or IRA-INV option) as well as the AN option and the LSD option. The previous discussion has indicated that the annuity distribution period of eight years was not sufficient to recover the cost of the annuity and that the unrecovered costs from the annuity option were greater than the income taxes paid under the LSD option. If the spouse elects the IRA-AN option, the annuity distribution period of five years (See Exhibit 3) is even shorter than the annuity distribution period of eight years the under previously discussed AN option, which will result in even more unrecovered costs under the IRA-AN option than the AN option. As a result, the LSD option will be preferred to the IRA-AN option.

It should be recalled that the LSD option qualifies for the ten-year averaging method while the IRA-INV option qualifies only for the regular income averaging method.

EXHIBIT 3

IRA ROLLOVER AND ANNUITY DISTRIBUTION PERIODS
SPOUSE ELECTS DISTRIBUTION

Age Difference Between Spouses	Spouse's Life Expectancy			
	10 Years		20 Years	
	IRA Rollover Period	Annuity Distribution Period	IRA Rollover Period	Annuity Distribution Period
0	0	8	0	18
5	3	5	3	15
10	8	0	8	10

When the difference between the income taxes incurred pertaining to these two options is greater than the earnings that accumulate in the IRA fund during the IRA rollover period, the preferred option will be the LSD option. As previously discussed, the shorter the IRA rollover period, the more likely the tax advantage of the LSD option will result in a greater amount bequeathed to the beneficiaries than would be available under the IRA-INV option. It appears that an IRA rollover period of three years (See Exhibit 3) is almost enough time to allow the accumulated earnings in the IRA fund during the rollover period to equal the tax difference between the ten-year averaging method and the regular income averaging method.

Note: The detailed output indicates that the LSD option resulted in only an additional \$12.20 being

bequeathed to the beneficiaries than what would be bequeathed under the IRA-INV option.

Age Difference Between Spouses Of Ten Years. As mentioned previously, the relatively short annuity distribution period of eight years will result in the LSD option being preferred to the AN option. When the spouse's life expectancy is ten years and the age difference between the spouses is ten years, the IRA balance is not distributed before the spouse dies. The income taxes incurred regarding the LSD option reduce the amount available to the beneficiaries, but the undistributed IRA balance has not been subject to income taxes. This normally results in the IRA balance at the death of the spouse being larger than the after tax balance from the LSD option. Therefore, when the spouse's life expectancy is ten years and the age difference between the spouses is also ten years, the IRA option is the optimal distribution option for the low spouse.

Middle Spouse And High Spouse

No Age Difference Between Spouses. As the previous discussion indicates, the relatively short annuity distribution period of eight years will result in the income taxes paid under the LSD option to be less than the unrecovered costs under the AN option. Since it is assumed that the financial position of the spouse upon the death of the taxpayer will preclude the IRA options, the optimal distribution option is the LSD option for either the middle spouse

or the high spouse who has a life expectancy of ten years when there is no age difference between the spouses.

Age Difference Between Spouses Of Five Years. As mentioned earlier, the short annuity distribution period of eight years for the AN option and five years for the IRA-AN option (See Exhibit 3) will result in the unrecovered costs under either the AN option or the IRA-INV option to be greater than the income taxes paid under the LSD option. Therefore, the LSD option will be preferred to either the AN option or the IRA-INV option.

Unlike the previous assumption that the low spouse consumes all the earnings from the LSD option each year, the middle spouse and the high spouse are assumed to consume only 75 and 20 percent, respectively, of the earnings from the LSD option. The accumulated savings and also the accumulated earnings on the amount saved under the LSD option along with the tax advantage of the LSD option, apparently, are sufficient to counteract the accumulated earnings in the IRA during the rollover period of three years (See Exhibit 3). Thus, when the spouse's life expectancy is ten years and the age difference between the spouses is five years, the optimal distribution option is the LSD option for both the middle spouse and the high spouse.

Age Difference Between Spouses Of Ten Years. The presentation above indicates that the relatively short annuity distribution period of eight years will cause either

the LSD option or the IRA options to be preferred to the AN option. The fact that the undistributed IRA balance has not been subjected to income taxes while the LSD option has been subjected to income taxes (which occurs when the spouse's life expectancy is ten years and the age difference between the spouses is ten years) results in the IRA option being preferred to the LSD option. Therefore, the optimal distribution option is the IRA option for either the middle spouse or the high spouse when the age difference between the spouses is ten years and the spouse has a life expectancy of ten years.

Spouse's Life Expectancy Of Twenty Years

Low Spouse And Middle Spouse

No Age Difference Between Spouses. It should be recalled that when there is no age difference between the spouses, the only options available to the spouse are the AN option and the LSD option because the spouse's financial position does not enable the spouse the option to roll the retirement fund balance over into an IRA. The relatively long annuity distribution period of 18 years (See Exhibit 3) and the fact that the implied earnings rate of the annuity is higher than the investment earnings rate (11 vs. six percent for the low spouse or eight percent for the middle spouse) appears to be sufficient to balance out the tax advantage of the LSD option. As a result, the optimal distribution option for either the low spouse or the middle

spouse is the AN option when the spouse's life expectancy is 20 years and there is no age difference between the spouses.

Age Difference Between Spouses Of Five Years. Since the annuity distribution period is relatively long, the effective implied earnings rate of the IRA-AN option would be greater than the investment earnings rate of either the LSD option or the IRA-INV option. Therefore, the IRA-AN option is preferred to either the LSD option or the IRA-INV option.

Because of the accumulated earnings during the IRA rollover period, the amount of premiums paid for the annuity is greater for the IRA-AN option than if the AN option is selected. This larger premium will result in greater annual annuity receipts, which in turn, results in larger savings per year by the spouse. Because of the greater accumulated savings over the spouse's life under the IRA-AN option, this option is preferred to the AN option. Thus, for both the low spouse and the middle spouse with a life expectancy of 20 years, the optimal distribution option is the IRA-AN option when there is an age difference between the spouses of five years.

Age Difference Between Spouses Of Ten Years. As presented above, the accumulated earnings during the IRA rollover period, will result in greater annuity receipts and savings under the IRA-AN option than under the AN option. Thus, the IRA-AN option is preferred to the AN option.

Since the earnings that accumulate during the IRA rollover period (eight years--See Exhibit 3) are not taxed during the rollover period, but the earnings from the LSD option are taxed when earned, the amount available for investment following the rollover period is greater under the IRA options than under the LSD option. As long as the additional accumulated earnings exceed the tax difference between the IRA-INV option and the LSD option, the IRA-INV option will be preferred to the LSD option.

Even though the effective earnings rate of the IRA-AN option is less than the implied earnings rate of 11 percent because the annuity distribution period is shorter than the projected life expectancy, apparently, the effective earnings rate of the IRA-AN option is greater than the investment earnings rate (i.e., six percent for the low spouse and eight percent for the middle spouse) of the IRA-INV option. Therefore, when the age difference between the spouses is ten years, the optimal distribution option is the IRA-AN option for both the low spouse and the middle spouse with a life expectancy of 20 years.

High Spouse

No Age Difference Between Spouses. Since the financial position of the spouse does not permit the option to roll the retirement fund balance over to an IRA, the spouse has to select between the AN option and the LSD option. Because the annuity distribution period of 18 years

(See Exhibit 3) is longer than the projected life expectancy used to determine the annuity receipts and the implied earnings rate of the annuity is greater than the investment earnings rate (11 vs. nine percent), the additional accumulated earnings of the AN option over the LSD option appear to be more than adequate to offset the tax advantage of the LSD option. As a result, when there is no age difference between the spouses, the optimal distribution option is the AN option for the high spouse who has a life expectancy of 20 years.

Age Difference Between Spouses Of Five Years. As cited above, the annuity distribution period of 15 years (See Exhibit 3) results in the effective implied earnings rate of the IRA-AN option being greater than the investment earnings rate of either the LSD option or the IRA-INV option. Further, as presented previously, the larger annuity receipts available under the IRA-AN option because of the accumulated earnings during the IRA rollover period results in greater savings for the IRA-AN option than under the AN option. Therefore, for the high spouse with a life expectancy of 20 years, the optimal distribution option is the IRA-AN option when the age difference between the spouses is five years.

Age Difference Between Spouses Of Ten Years. As indicated previously, the IRA-AN option is preferred to the AN option because the accumulated earnings during the

rollover period result in larger annuity receipts and savings under the IRA-AN option than under the AN option. However, it should be remembered that the LSD option qualifies for the ten-year averaging method but the IRA-INV option qualifies only for the regular averaging method which normally results in more income taxes being paid, and, thus, there will be less after tax dollars invested under the IRA-INV option than under the LSD option. Unless the difference between the accumulated earnings (nine percent) which have not been taxed under the IRA-INV option during the rollover period and the taxed investment earnings (4.5 percent) under the LSD option is greater than the tax advantage of the LSD option, the LSD option will be preferred to the IRA-INV option. It appears that the tax advantage of the LSD option is greater than the earnings advantage of the IRA-INV option during the rollover period. Thus, the LSD option is preferred to the IRA-INV option.

The discussion presented earlier indicated that the effective earnings rate of the IRA-AN option is less than the implied earnings rate of 11 percent because the annuity distribution period is shorter than the projected life expectancy. Under the IRA-AN option, the distribution is taxed at the regular income tax rate (50 percent for the high spouse) but under the LSD option the spouse may elect the ten-year averaging method, which normally results in an effective tax rate that is less than 50 percent. Apparently, the difference between the reduced effective earnings

rate under the IRA-AN option and the investment earnings rate (nine percent) under the LSD option is not sufficient to counterbalance the tax advantage of the LSD option for the high spouse. As a result, the optimal distribution option is the LSD option for the high spouse who has a life expectancy of 20 years when the age difference between the spouses is ten years.

Summary

If the spouse elects distribution because the taxpayer dies before the distribution from the qualified retirement plan had started, the optimal distribution option varies depending on the spouse profile category, the spouse's life expectancy, and the age difference between the spouses. The percentage of the other assets owned by the spouse does not influence the optimal distribution option. But, the following factors affect the optimal distribution decision: (1) the length of the annuity distribution period, (2) the length of the IRA rollover period, (3) the tax advantage of the LSD option over the IRA-INV option, (4) whether the distribution from the IRA fund had commenced before the spouse had died, (5) the fact that income taxes are paid immediately on the earnings from the LSD investment, but the earnings from the IRA fund are not taxed until the IRA fund is distributed, (6) the difference between the investment and the annuity earnings rates, (7) the difference between the investment and the IRA earnings rates, and (8) the

accumulation of interest in the IRA during the rollover period.

Conclusion

Shorter Than Normal Life Expectancy

When both the taxpayer and the spouse have a relatively short life expectancy (e.g., both spouses have a life expectancy of two years) or when both spouses are not expected to be alive at the required distribution date, the optimal distribution option, if the taxpayer's financial position allows, is to postpone the final distribution (i.e., by either leaving the retirement fund balance in the qualified plan or rolling the retirement fund balance over into an IRA). If the taxpayer's financial position requires immediate income from the qualified retirement plan, the LSD option is the optimal distribution option when both spouses have a relatively short life expectancy.

Normal Life Expectancy

When the last surviving spouse has a normal life expectancy (e.g., ten years), the low taxpayer should, if his or her financial position permits, postpone distribution either by keeping the retirement fund in the plan or by rolling the fund over into an IRA. When the taxpayer is expected to be the last surviving spouse or both spouses are surviving at the required distribution date, the optimal distribution option for the low taxpayer is an annuity with

50 percent payments to the spouse. However, if only the spouse is alive at the distribution date, the optimal distribution option varies depending on (1) the age difference between the spouses, (2) whether the taxpayer has elected distribution at the age of 65, and (3) the configuration of the plan variables (See Table XVI). But, when the last surviving spouse has a normal life expectancy and the taxpayer requires income immediately from the retirement plan, the optimal distribution option for the low taxpayer is the LSD option.

For the taxpayer in the high profile, the LSD option could be elected when the taxpayer is either 65 or 70 1/2 years old, if the last surviving spouse has a normal life expectancy. In general, the taxpayer in the middle profile should elect the LSD option at either the age of 65 or 70 1/2 when the last surviving spouse has a normal life expectancy. However, for the middle profile if the taxpayer is expected to be the last surviving spouse, the optimal distribution option shifts to the IRA-INV option when there exists nondeductible employee contributions.

Longer Than Normal Life Expectancy

When the last surviving spouse has a longer than normal life expectancy (e.g., 20 years), the taxpayer in the low or middle profile should postpone distribution either by retaining the fund in the retirement plan or by rolling the retirement fund balance over into an IRA, if the taxpayer's

financial position permits these options. At the required distribution date, an annuity should be selected. For the taxpayer in the low profile or middle profile whose financial position requires immediate income from the retirement plan, the taxpayer should elect an annuity if the last surviving spouse has a longer than normal life expectancy.

If only one spouse survives at the required distribution date, a single life annuity should be issued. However, if the taxpayer is expected to be the last surviving spouse, an annuity with 50 percent payments to the spouse should be selected. But, if the spouse is expected to be the last surviving spouse, an annuity with 100 percent payments to the spouse should be selected.

When the last surviving spouse has a longer than normal life expectancy (e.g., 20 years), the taxpayer in the high profile should, if his or her financial position permits, postpone the distribution either by leaving the funds in the retirement plan or by rolling the retirement fund balance over into an IRA. If the IRA option is selected, an annuity should be issued at the required IRA distribution date. The annuity features would be the same as the ones discussed earlier.

However, if the retirement fund balance is retained in the plan, the final distribution option varies depending on whether both spouses are alive at the distribution date. If only the taxpayer is surviving, a single life annuity should

be issued. However, a lump-sum distribution should be selected if the taxpayer had pre-1974 contributions but did not have any nondeductible employee contributions. If both spouses are surviving at the required distribution date, a lump-sum distribution should be made from the retirement plan. But, an annuity with 50 percent payments to the spouse should be selected by the spouses if the taxpayer had neither pre-1974 contributions nor nondeductible employee contributions.

When the last surviving spouse has a longer than normal life expectancy and the taxpayer will need some immediate income from the retirement plan, the taxpayer in the high profile should select an annuity. The annuity features would be the same as the ones previously discussed.

In this chapter the results for the 1985 tax year provisions have been examined. The results for the Tax Reform Act of 1986 (TRA-1986) will be compared to the results under the 1985 tax year provisions in Chapter V.

ENDNOTES

¹In this paper, the ten-year averaging method indicates the lowest income tax determined using the following (a) the ten-year averaging method, (b) the regular income averaging method or (c) the regular income tax rate.

²In this paper, the regular income averaging method indicates the lowest income tax determined using either the regular income averaging method or the regular income tax rate.

CHAPTER V

COMPARISON OF THE 1985 TAX YEAR PROVISIONS WITH THE TRA-1986 PROVISIONS

Distribution At The Age Of 65

Taxpayer's Life Expectancy Of Two Years

Table XVII compares the results under the 1985 tax year provisions with the results under the TRA-1986 provisions for a taxpayer who elects distribution at the age of 65 and dies two years after retirement taking into consideration the spouse's life expectancy and the age difference between the spouses. As can be observed in Table XVII, in the majority of the cases, the revision of the income tax provisions under TRA-1986 did not result in any changes regarding the selection of the optimal distribution option.

Spouse's Life Expectancy Of Ten Years

Low Taxpayer. There is a minor shift that occurs for the low taxpayer whose spouse has a ten-year life expectancy and there is no age difference between the spouses. Under the 1985 tax year provisions the IRA-INV option was the optimal distribution option when the taxpayer had no pre-1974 participation in the retirement plan but had made

TABLE XVII

COMPARISON OF THE 1985 TAX YEAR AND TRA-1986 RESULTS¹
 TAXPAYER ELECTS DISTRIBUTION AT THE AGE OF 65
 TAXPAYER'S LIFE EXPECTANCY IS 2 YEARS

Taxpayer Spouse's Life Expectancy	Low			Middle			High		
	Age Difference Between Spouses			Age Difference Between Spouses			Age Difference Between Spouses		
	0	5	10	0	5	10	0	5	10
2	IRA (IRA)	IRA (IRA)	IRA (IRA)	IRA (IRA)	IRA (IRA)	IRA (IRA)	LSD (LSD)	LSD (LSD)	LSD (LSD)
10	LSD ^{2,3} (LSD ^{3,4})	IRA-INV (IRA-INV)	IRA (IRA)	LSD (LSD)	LSD (IRA-INV)	IRA (IRA)	LSD (LSD ⁵)	LSD (IRA-INV)	IRA (IRA)
20	IRA-AN (IRA-AN)	IRA-AN (IRA-AN)	IRA-AN (IRA-AN)	IRA-AN (IRA-AN)	IRA-AN (IRA-AN)	IRA-AN (IRA-AN)	IRA-AN (IRA-AN)	IRA-AN (IRA-AN)	LSD (IRA-INV)

¹Symbols not in parentheses are the results under the 1985 tax year provisions. Symbols in parentheses are the results under the TRA-1986 provisions.

²IRA-INV if the taxpayer has no pre-1974 participation but has nondeductible employee contributions to the retirement plan.

³IRA-AN if the taxpayer has neither pre-1974 participation nor nondeductible employee contributions to the retirement plan.

⁴If the taxpayer has no pre-1974 participation but has nondeductible employee contributions to the retirement plan, the difference between the LSD option and the IRA-INV option is less than \$70.

⁵IRA-INV if taxpayer has neither pre-1974 participation nor nondeductible employee contributions to the retirement plan.

LSD = Lump sum distribution

IRA = Rolled over into an IRA

IRA-AN = Rolled over into an IRA and at the required distribution date the IRA balance is used to acquire a single life annuity

IRA-INV = Rolled over into an IRA and the after income tax lump sum distribution from the IRA at the required distribution date is invested

nondeductible employee contributions to the retirement plan. But, there was less than a \$600 difference in the amount bequeathed to the beneficiaries between the IRA-INV option and the LSD option. However, under the TRA-1986 provisions, the LSD option is the preferred option, but there is less than a \$70 difference in the amount bequeathed between the LSD option and the IRA-INV option.

Because the taxpayer was at least 50 years old on January 1, 1986, the taxpayer may still elect the ten-year averaging method, using the 1986 income tax rate schedule, under the TRA-1986 provisions. Therefore, the revisions in the income tax provisions under TRA-1986 do not appear to affect the income taxes to be paid and the amount available to be bequeathed to the taxpayer's beneficiaries under the LSD option.

However, TRA-1986 repealed the regular income averaging method that was available for the IRA-INV option under the 1985 tax year provisions. Even though there is a "two-tier" tax rate schedule under TRA-1986, the repeal of the regular income averaging method results in a slightly higher income tax rate being applicable under the TRA-1986 provisions than under the 1985 tax year provisions when the IRA-INV option is elected by the low taxpayer. Apparently, the slightly higher income tax rate under TRA-1986 is sufficient to cause the income taxes being paid to be slightly greater than the untaxed accumulated earnings

during the two-year IRA rollover period (See Exhibit 1--Chapter IV).

Middle Taxpayer. The optimal distribution option becomes the IRA-INV option instead of the LSD option for the middle taxpayer whose spouse has a ten-year life expectancy and there is a five-year age difference between the spouses. Even though the regular income averaging method was repealed under TRA-1986, the "two-tier" tax rate schedule under TRA-1986 causes the applicable TRA-1986 income tax rate, when the IRA-INV option is elected by the middle taxpayer, to decrease about ten percent from the applicable tax rate under the regular income averaging method which was available in 1985. It appears that the decrease in the applicable income tax rate under the TRA-1986 provisions for the IRA-INV option and the accumulated earnings during the five-year IRA rollover period (See Exhibit 1--Chapter IV) are sufficient to counteract the tax advantage of the ten-year averaging method that is available for the LSD option.

High Taxpayer. There is a shift from the LSD option to the IRA-INV option as the optimal distribution option when the spouse of the high taxpayer has a life expectancy of ten years and there is a five-year age difference between the spouses. The detailed output indicates that for the high taxpayer there is over a 20 percent decrease in the applicable income tax rate under TRA-1986 than under the 1985 income tax rate using the regular income averaging

method. It appears that the tax advantage available for the LSD option is not sufficient to counteract the combined effect of the accumulated earnings during the five-year IRA rollover period and the revised income tax rate schedule under TRA-1986 for the IRA-INV option.

Another minor change in the optimal distribution option occurs for the high taxpayer whose spouse has a life expectancy of ten years and there is no age difference between the spouses. When the high taxpayer has no pre-1974 participation in the retirement plan and has not made nondeductible employee contributions to the retirement plan, the optimal distribution option changes from the LSD option to the IRA-INV option, but there is less than a \$1,200 difference in the amount bequeathed between these two options. As discussed previously, the tax advantage of the LSD option is less when a taxpayer has neither pre-1974 participation nor nondeductible employee contributions than if the taxpayer has either of these plan variables. Thus, when the LSD tax advantage is at a minimum, the decrease in the applicable income tax rate for the IRA-INV option as a result of the TRA-1986 provisions is barely sufficient to cause a shift in the optimal distribution option to the IRA-INV option if the high taxpayer with a two-year life expectancy has neither pre-1974 participation nor nondeductible employee contributions when the spouse's life expectancy is ten years and both spouses are the same age.

Spouse's Life Expectancy Of Twenty Years

When the high taxpayer has a spouse with a 20-year life expectancy and there is a ten-year age difference between the spouses, the optimal distribution option becomes the IRA-INV option under the TRA-1986 provisions instead of the LSD option, which was the optimal distribution option under the 1985 tax year provisions. The revised income tax rate schedule of TRA-1986 results in a decrease in the applicable income tax rate for the IRA-INV option from 50 percent under the 1985 tax year provisions to 28 percent. But, the income tax rate is between 19 and 25 percent under the LSD option depending on the plan variables for both the 1985 tax year provisions and the TRA-1986 provisions. Since the decrease in the applicable income tax rate under the TRA-1986 provisions results in less variability between the income tax rates under the LSD option and the IRA-INV option, the accumulated earnings during the ten-year IRA rollover period (See Exhibit 1--Chapter IV) under the IRA-INV option are apparently sufficient to offset the reduced tax advantage of the LSD option under the TRA-1986 provisions.

Summary

When the taxpayer elects distribution at the age of 65 and dies two years after retirement, the optimal distribution option varies in a few cases depending on the tax provisions in effect when the distribution is elected. One or a

combination of the following factors results in the change in the optimal distribution option under the TRA-1986 provisions: (1) the accumulated earnings in the IRA during the rollover period, (2) the change in the applicable income tax rate under the TRA-1986 provisions for the IRA-INV option, and (3) the effect of the plan variables on the tax advantage of the LSD option.

Taxpayer's Life Expectancy Of Ten Years

The results under the 1985 tax year provisions and the results under the TRA-1986 provisions are compared in Table XVIII for a taxpayer who elects distribution at the age of 65 and dies ten years after retirement. The revision of the income tax provisions under TRA-1986, as can be seen in Table XVIII, causes a change in the optimal distribution option for the middle taxpayer and the high taxpayer when the spouse has either a two-year or a ten-year life expectancy.

Middle Taxpayer

As discussed above, there is greater than a ten percent decrease in the applicable income tax rate for the IRA-INV option under the TRA-1986 provisions as compared to the 1985 tax year provisions. This change in the income tax rate for the IRA-INV option under the TRA-1986 provisions reduces the tax advantage of the ten-year averaging method available under the LSD option. The reduction of the LSD tax advantage under the TRA-1986 provisions is apparently large

TABLE XVIII

COMPARISON OF THE 1985 TAX YEAR AND TRA-1986 RESULTS¹
 TAXPAYER ELECTS DISTRIBUTION AT THE AGE OF 65
 TAXPAYER'S LIFE EXPECTANCY IS 10 YEARS

Spouse's Life Expectancy	Low Taxpayer	Middle Taxpayer	High Taxpayer
2	IRA-INV (IRA-INV)	IRA-INV ² /LSD ³ (IRA-INV)	LSD (IRA-INV)
10	IRA-INV (IRA-INV)	IRA-INV ² /LSD ³ (IRA-INV)	LSD (IRA-INV)
20	IRA-100 (IRA-100)	IRA-100 (IRA-100)	IRA-100 (IRA-100)

¹Symbols not in parentheses are the results under the 1985 tax year provisions. Symbols in parentheses are the results under the TRA-1986 provisions.

²IRA-INV if the taxpayer has made nondeductible employee contributions to the retirement plan.

³LSD if the taxpayer has not made any nondeductible employee contributions to the retirement plan.

LSD = Lump-sum distribution

IRA-INV = Rolled over into an IRA and the after income tax lump-sum distribution from the IRA at the required distribution date is invested

IRA-100 = Rolled over into an IRA and at the required distribution date, the IRA balance is used to acquire a joint annuity with 100 percent of the taxpayer's annual annuity receipts continuing to be paid to the spouse after the taxpayer's death

enough to permit the accumulated earnings during the IRA rollover period of six years to favor the IRA-INV option over the LSD option.

High Taxpayer

As mentioned previously, the TRA-1986 provisions result in over a 20 percent decrease in the applicable income tax rate for the IRA-INV option as compared to the 1985 tax year provisions. Thus, there is less variability between the income tax rates under the LSD and the IRA-INV options under TRA-1986 than there is under the 1985 tax year provisions. The reduced variability between the LSD and the IRA-INV income tax rates under TRA-1986 causes the accumulated earnings during the six-year IRA rollover period to result in the IRA-INV option being the optimal distribution option under TRA-1986 even though the earnings rate of the LSD option is greater than the earnings rate of an IRA option (nine vs. eight percent).

Summary

The tax provisions in effect when the qualified retirement plan is distributed may cause the optimal distribution option to vary for the taxpayer who has a ten-year life expectancy. The factors discussed in the summary for Table XVII also are the potential cause of the shift in the optimal distribution option for the taxpayer with a ten-year life expectancy.

Taxpayer's Life Expectancy Of Twenty
Years

Table XIX compares the results under the 1985 tax year provisions with the results under the TRA-1986 provisions for the taxpayer who elects distribution at the age of 65 and has a life expectancy of 20 years taking into consideration the spouse's life expectancy. As can be observed in Table XIX, the optimal distribution options are the same under the TRA-1986 provisions as they were under the 1985 tax year provisions (i.e., IRA-AN or IRA-50 depending on the spouse's life expectancy).

This occurs even though TRA-1986 revised the dollar amount of the exclusion that can be excluded over the taxpayer's life. When the taxpayer has made nondeductible employee contributions to the qualified retirement plan, the maximum amount that may be excluded under TRA-1986 from the annuity receipts over the taxpayer's life is the dollar amount that relates to his or her nondeductible employee contributions. But, prior to TRA-1986, even if the taxpayer lived longer than the normal life expectancy, the annual exclusion continued to be in effect over the remaining life of the taxpayer.

However, it should be recalled that the earnings that accumulate in the IRA during the rollover period are not subject to income taxes until distributed. The postponement of taxation of the IRA earnings allows more earnings to accumulate in the IRA fund (i.e., compound

TABLE XIX

COMPARISON OF THE 1985 TAX YEAR AND TRA-1986 RESULTS¹
 TAXPAYER ELECTS DISTRIBUTION AT THE AGE OF 65
 TAXPAYER'S LIFE EXPECTANCY IS 20 YEARS

Spouse's Life Expectancy	Low Taxpayer	Middle Taxpayer	High Taxpayer
2	IRA-AN (IRA-AN)	IRA-AN (IRA-AN)	IRA-AN (IRA-AN)
10	IRA-50 (IRA-50)	IRA-50 (IRA-50)	IRA-50 (IRA-50)
20	IRA-50 (IRA-50)	IRA-50 (IRA-50)	IRA-50 (IRA-50)

¹Symbols not in parentheses are the results under the 1985 tax year provisions. Symbols in parentheses are the results under the TRA-1986 provisions.

IRA-AN = Rolled over into an IRA and at the required distribution date, the IRA balance is used to acquire a single life annuity

IRA-50 = Rolled over into an IRA and at the required distribution date, the IRA balance is used to acquire a joint annuity with 50 percent of the taxpayer's annual annuity receipts to be paid to the spouse after the taxpayer's death

effect). Apparently, when the annuity distribution period is relatively long, the compound effect of the IRA options is sufficient to counterbalance the income tax advantage of the LSD option even though there is no exclusion allowable after the taxpayer's costs (nondeductible employee contributions) have been recovered.

Summary

When the taxpayer's life expectancy is 20 years, the revision of the income tax provisions under TRA-1986 does not appear to cause any shifts in the selection of the optimal distribution option for a qualified retirement plan.

Distribution At The Age Of 65--Without The IRA Option

Taxpayer's Life Expectancy Of Two Years

The results under the 1985 tax year provisions and the TRA-1986 provisions are compared in Table XX for a taxpayer who lives to the age of 67 but whose financial position prevents the selection of the option of rolling the retirement plan fund into an IRA. The only change in the optimal distribution option occurs for the high taxpayer whose spouse has a life expectancy of 20 years (See Table XX).

The TRA-1986 provisions result in a decrease in the income tax rate for the high taxpayer from 50 to 31 percent.

TABLE XX

COMPARISON OF THE 1985 TAX YEAR AND TRA-1986 RESULTS¹
 DISTRIBUTION AT THE AGE OF 65--WITHOUT IRA OPTION
 TAXPAYER'S LIFE EXPECTANCY IS 2 YEARS

Spouse's Life Expectancy	Low Taxpayer	Middle Taxpayer	High Taxpayer
2	LSD (LSD)	LSD (LSD)	LSD (LSD)
10	LSD (LSD)	LSD (LSD)	LSD (LSD)
20	AN-100 (AN-100)	AN-100 (AN-100)	LSD (AN-100)

¹Symbols not in parentheses are the results under the 1985 tax year provisions. Symbols in parentheses are the results under the TRA-1986 provisions.

LSD = Lump-sum distribution

AN-100 = A joint annuity with 100 percent of the taxpayer's annual annuity receipts continuing to be paid to the spouse after the taxpayer's death

Thus, even though the tax rate applied against the return of the investment (i.e., the retirement fund balance) for the AN-100 option is still greater than it is for the LSD option under TRA-1986, the difference between the tax rate applied under the LSD option and the tax rate applied under the AN-100 option has been greatly reduced.

This causes a larger portion of the return on the investment for the AN-100 option being saved each year under the TRA-1986 provisions than was possible under the 1985 tax year provisions. This, in turn, will cause the return of the investment for the AN-100 option under TRA-1986 to exceed the after tax investment under the LSD option in a shorter time period than had occurred under the 1985 tax provisions (10 1/2 years vs. 15 years).

The additional 4 1/2 years under TRA-1986 that the annuity receipts exceed the after tax lump-sum investment should result in more accumulated savings than could have accumulated under the 1985 tax year provisions. Apparently, the additional savings from the AN-100 option under TRA-1986 were more than adequate to counteract the tax advantage of the LSD option because the after tax lump-sum distribution has been invested the entire 20 years. This occurs even though the annuity receipts for the taxpayer who has nondeductible employee contributions are subject to higher income taxes after the cost of the annuity to the taxpayer (i.e., the nondeductible employee contributions) has been recovered.

A change in a tax provision under TRA-1986 might

have been expected to affect the optimal distribution option for the taxpayers and for their spouses with relatively short life expectancies (e.g., a two-year life expectancy for both the taxpayer and the spouse). Under TRA-1986 the annuitants who die before recovering their cost of the annuity are permitted to deduct the unrecovered cost on their last tax return. However, for qualified retirement plan purposes, the taxpayer's cost of the annuity is the amount of his or her nondeductible employee contributions to the retirement plan (i.e., 12 percent). Apparently, the relatively small unrecovered cost that occurs in this research is not sufficient to cause a shift in the optimal distribution option.

Summary

The revision of the income tax provisions enacted in TRA-1986 resulted in a change in the optimal distribution option for the high taxpayer whose spouse has a life expectancy of 20 years. It appears that the combined effect of the following factors results in the change in the optimal distribution option under the TRA-1986 provisions: (1) increased savings from the annual annuity receipts as a result of the reduction in the income tax rate for the high taxpayer and (2) the relatively long annuity distribution period.

Taxpayer's Life Expectancy Of Ten Years

Table XXI compares the results for a taxpayer who lives to the age of 75 but whose financial position prevents the election of rolling the retirement plan over into an IRA under both the 1985 tax year provisions and the TRA-1986 provisions. As can be observed in Table XXI, the optimal distribution option remains the same under both sets of tax provisions except when the high taxpayer's spouse has a life expectancy of 20 years.

Since in this case the spouse survives the taxpayer, the change in the taxpayer's life expectancy from two years to ten years does not modify the annuity distribution period. Because the annuity receipts and the annuity distribution period remain the same, the earlier discussion related to Table XX on the shift in the optimal distribution option still applies.

Taxpayer's Life Expectancy Of Twenty Years

The results for both the 1985 tax year provisions and the TRA-1986 provisions are compared in Table XXII for a taxpayer who lives to the age of 85 but whose financial position requires immediate income from his or her qualified retirement plan. The optimal distribution option remains the same under both sets of tax provisions (See Table XXII).

Apparently, the TRA-1986 provisions which limit the amount a taxpayer can exclude from his or her annuity

TABLE XXI

COMPARISON OF THE 1985 TAX YEAR AND TRA-1986 RESULTS¹
 DISTRIBUTION AT THE AGE OF 65--WITHOUT IRA OPTION
 TAXPAYER'S LIFE EXPECTANCY IS 10 YEARS

Spouse's Life Expectancy	Low Taxpayer	Middle Taxpayer	High Taxpayer
2	LSD (LSD)	LSD (LSD)	LSD (LSD)
10	LSD (LSD)	LSD (LSD)	LSD (LSD)
20	AN-100 (AN-100)	AN-100 (AN-100)	LSD (AN-100)

¹Symbols not in parentheses are the results under the 1985 tax year provisions. Symbols in parentheses are the results under the TRA-1986 provisions.

LSD = Lump-sum distribution

AN-100 = A joint annuity with 100 percent of the taxpayer's annual annuity receipts continuing to be paid to the spouse after the taxpayer's death

TABLE XXII

COMPARISON OF THE 1985 TAX YEAR AND TRA-1986 RESULTS¹
 DISTRIBUTION AT THE AGE OF 65--WITHOUT IRA OPTION
 TAXPAYER'S LIFE EXPECTANCY IS 20 YEARS

Spouse's Life Expectancy			
	Low Taxpayer	Middle Taxpayer	High Taxpayer
2	AN-50 (AN-50)	AN-50 (AN-50)	AN-50 (AN-50)
10	AN-50 (AN-50)	AN-50 (AN-50)	AN-50 (AN-50)
20	AN-50 (AN-50)	AN-50 (AN-50)	AN-50 (AN-50)

¹Symbols not in parentheses are the results under the 1985 tax year provisions. Symbols in parentheses are the results under the TRA-1986 provisions.

AN-50 = A joint annuity with 50 percent of the taxpayer's annual annuity receipts continuing to be paid to the spouse after the taxpayer's death

receipts, because of the taxpayer's cost of the annuity (i.e., nondeductible employee contributions), do not cause a large enough decrease in accumulated savings under the AN-50 option to result in a shift in the optimal distribution option for taxpayers with relatively long life expectancies (e.g., 20 years).

Summary

The revision of the income tax provisions under TRA-1986 does not appear to cause any shifts in the optimal distribution option when the taxpayer has a life expectancy of 20 years.

Taxpayer Elects Distribution

At The Age Of 70 1/2

Taxpayer's Life Expectancy Of Ten Years

The comparison of the results of the 1985 tax year provisions with the results of the TRA-1986 provisions are presented in Table XXIII for a taxpayer who elects distribution at the age of 70 1/2 and lives to the age of 75. The only change in the optimal distribution option occurs when the high taxpayer has a spouse with a 20-year life expectancy.

The reduced income tax rate under TRA-1986 results in greater annual savings from the AN-100 option under the TRA-1986 provisions than was possible under the 1985 tax year provisions. The 20-year life expectancy of the spouse appears to be long enough to permit the additional savings

TABLE XXIII

COMPARISON OF THE 1985 TAX YEAR AND TRA-1986 RESULTS¹
 TAXPAYER ELECTS DISTRIBUTION AT THE AGE OF 70 1/2
 TAXPAYER'S LIFE EXPECTANCY IS 10 YEARS

Spouse's Life Expectancy	Low Taxpayer	Middle Taxpayer	High Taxpayer
2	LSD (LSD)	LSD (LSD)	LSD (LSD)
10	LSD (LSD)	LSD (LSD)	LSD (LSD)
20	AN-100 (AN-100)	AN-100 (AN-100)	LSD (AN-100)

¹Symbols not in parentheses are the results under the 1985 tax year provisions. Symbols in parentheses are the results under the TRA-1986 provisions.

LSD = Lump-sum distribution

AN-100 = A joint annuity with 100 percent of the taxpayer's annual annuity receipts continuing to be paid to the spouse after the taxpayer's death

from the AN-100 option under the TRA-1986 provisions to accumulate to a larger amount of assets than is feasible under the LSD option.

Summary

When the taxpayer elects distribution at the age of 70 1/2 and has a ten-year life expectancy, the optimal distribution option varies depending on the tax provisions in effect at the required distribution date. It appears that the combined effect of the following factors causes the shift in the optimal distribution option under the TRA-1986 provisions: (1) increased savings from the annual annuity receipts as a result of the reduction in the income tax rate for the high taxpayer and (2) the relatively long annuity distribution period.

Taxpayer's Life Expectancy Of Twenty Years

The results under both the 1985 tax year provisions and the TRA-1986 provisions for a taxpayer who elects distribution at the age of 70 1/2 and lives until the age of 85 are presented in Table XXIV. The revision of the tax provisions under TRA-1986 has resulted in different optimal distribution options for the high taxpayer (See Table XXIV).

As mentioned previously, the revision of the income tax rate schedule under TRA-1986 results in an annuity option being preferred over the LSD option when the annuity

TABLE XXIV

COMPARISON OF THE 1985 TAX YEAR AND TRA-1986 RESULTS¹
 TAXPAYER ELECTS DISTRIBUTION AT THE AGE OF 70 1/2
 TAXPAYER'S LIFE EXPECTANCY IS 20 YEARS

Spouse's Life Expectancy	Low Taxpayer	Middle Taxpayer	High Taxpayer
2	AN (AN)	AN (AN)	AN ² (AN)
10	AN-50 (AN-50)	AN-50 (AN-50)	LSD ³ (AN-50)
20	AN-50 (AN-50)	AN-50 (AN-50)	LSD ³ (AN-50)

¹Symbols not in parentheses are the results under the 1985 tax year provisions. Symbols in parentheses are the results under the TRA-1986 provisions.

²LSD if the taxpayer has made no employee contributions to the retirement plan but has pre-1974 participation.

³AN-50 if the taxpayer has neither pre-1974 participation nor nondeductible employee contributions to the retirement plan.

LSD = Lump-sum distribution

AN = A single life annuity

AN-50 = A joint annuity with 50 percent of the taxpayer's annual annuity receipts continuing to be paid to the spouse after the taxpayer's death

distribution period is relatively long. Since the taxpayer has a 20-year life expectancy, the life expectancy of the spouse will not influence the annuity distribution period. Therefore, the reduced income tax rate and the relatively long annuity distribution period favor an annuity option over the LSD under the TRA-1986 provisions.

In addition, when the spouse dies before the annuity starts (i.e., spouse has a two-year life expectancy), the implied earnings rate of the single life annuity (11 percent) issued is greater than the nine percent earnings rate available under the LSD option. The earnings rate advantage of the AN option results in a larger amount being available to the beneficiaries under the AN option than would be feasible under the LSD option.

As discussed in Chapter IV, when the taxpayer lives as long as or longer than the spouse, the AN-50 option will result in a larger amount being available to the beneficiaries than would be available under the AN-100 option. The implied earnings rate of the AN-50 option (ten percent) is greater than the earnings rate available under the LSD option (nine percent). The earnings rate advantage of the AN-50 option over the LSD option, the reduced income tax rate for the high taxpayer under TRA-1986 for the AN-50 option and the relatively long annuity distribution period all combine to result in the AN-50 option being preferred by the high taxpayer over the LSD option under the TRA-1986 provisions.

Summary

The revision of the income tax provisions enacted in TRA-1986 results in a change in the optimal distribution option for the high taxpayer who elects distribution at the age of 70 1/2 and has a 20-year life expectancy. One or a combination of the following factors appears to cause the change in the optimal distribution option under the TRA-1986 provisions: (1) the earnings rate advantage of the AN option over the LSD option, (2) the earnings rate advantage of the AN-50 option over the LSD option, (3) the reduced income tax rate for the high taxpayer under TRA-1986 for the annuity options, and (4) the relatively long annuity distribution period.

Spouse Elects Distribution After Taxpayer's Death

Table XXV presents a comparison of the results of the 1985 tax year provisions with the results of the TRA-1986 provisions when the spouse elects distribution after the taxpayer's death. For the majority of the cases (See Table XXV) there is no change in the optimal distribution option as a result of the revision of the income tax provisions under TRA-1986.

Low Spouse

When the low spouse has a life expectancy of ten years and there is a five-year age difference between the spouses,

TABLE XXV

COMPARISON OF THE 1985 TAX YEAR AND TRA-1986 RESULTS¹
 TAXPAYER ELECTS DISTRIBUTION AT THE AGE OF 70 1/2
 TAXPAYER'S LIFE EXPECTANCY IS 2 YEARS

Taxpayer Spouse's Life Expectancy	Low			Middle			High		
	Age Difference Between Spouses			Age Difference Between Spouses			Age Difference Between Spouses		
	0	5	10	0	5	10	0	5	10
2	Plan ² (Plan ²)	Plan ² (Plan ²)	Plan ² (Plan ²)	Plan ² (Plan ²)	Plan ² (Plan ²)	Plan ² (Plan ²)	Plan ² (Plan ²)	Plan ² (Plan ²)	Plan ² (Plan ²)
10	LSD (LSD)	LSD ³ (IRA-INV)	IRA (IRA)	LSD (LSD)	LSD (LSD)	IRA (IRA)	LSD (LSD)	LSD (LSD)	IRA (IRA)
20	AN (AN)	IRA-AN (IRA-AN)	IRA-AN (IRA-AN)	AN (AN)	IRA-AN (IRA-AN)	IRA-AN (IRA-AN)	AN (AN)	IRA-AN (AN)	LSD (AN)

¹Symbols not in parentheses are the results under the 1985 tax year provisions. Symbols in parentheses are the results under the TRA-1986 provisions.

²Since the taxpayer elected to postpone distribution until the age of 70 1/2, the qualified retirement plan balance has not been distributed prior to the death of both the taxpayer and the spouse.

³If the taxpayer has nondeductible employee contributions to the retirement plan but has no pre-1974 participation, the difference between the LSD option and the IRA-INV option is only \$12.20.

LSD = Lump sum distribution

AN = A single life annuity

IRA = Rolled over into an IRA

IRA-AN = Rolled over into an IRA and at the required distribution date the IRA balance is used to acquire a single life annuity

there is a shift in the optimal distribution option from primarily the LSD option to the IRA-INV option. Even though the regular income averaging method was repealed under TRA-1986, the "two tier" tax rate schedule available under TRA-1986 results in a decrease in the applicable income tax rate for the IRA-INV option. It appears that the combined effect of the decrease in the applicable income tax rate under the TRA-1986 provisions for the IRA-INV option and the accumulated earnings during the three-year IRA rollover period (See Exhibit 3--Chapter IV) are sufficient to counteract the tax advantage of the ten-year averaging method that is available under the LSD option.

High Spouse

The optimal distribution option shifts from the IRA-AN option under the 1985 tax year provisions to the AN option under the TRA-1986 provisions when the high spouse has a 20-year life expectancy and there is a five-year age difference between the spouses. The implied earnings rate for a single life annuity of 11 percent is greater than the IRA's earnings rate of eight percent. It appears that the higher earnings rate available under the annuity option during the three-year IRA rollover period combined with the lower income tax rate on the annuity receipts that is available under the TRA-1986 provisions are sufficient to permit the shift of the optimal distribution option from the IRA-AN option to the AN option.

In addition, the revision of the tax provisions by TRA-1986 appears to cause the optimal distribution option to change from the LSD option to the AN option when the spouse has a 20-year life expectancy and there is a ten-year age difference between the spouses. The difference between the implied earnings rate of an annuity and the earnings rate available under the LSD option (11 vs. nine percent) in combination with the lower income tax rate on the annuity receipts under the TRA-1986 provisions apparently are sufficient to cause the change in the optimal distribution option from the LSD option to the AN option for a spouse who has a 20-year life expectancy and there is a ten-year age difference between the spouses.

Summary

When the spouse elects distribution after the taxpayer's death, the optimal distribution option varies in a few cases depending on the tax provisions in effect when the spouse elects distribution. One or a combination of the following factors appears to result in the change in the optimal distribution option under the revised tax provisions enacted in TRA-1986: (1) accumulated earnings during the IRA rollover period, (2) the change in the applicable income tax rate under the TRA-1986 provisions for the IRA-INV option, (3) earnings rate advantage of the AN option over the LSD option, and (4) the relatively long annuity distribution period.

Conclusion

Shorter Than Normal Life Expectancy

When both the taxpayer and the spouse have a shorter than normal life expectancy (e.g., both spouses have a life expectancy of two years), the revision of the income tax provisions enacted in TRA-1986 does not appear to alter the optimal distribution option. If the taxpayer's financial position allows, the optimal distribution option requires the postponement of the final distribution by either leaving the retirement fund balance in the qualified plan or rolling the retirement fund balance over into an IRA. However, if the taxpayer's financial position requires immediate income from the qualified retirement plan, the LSD option is the optimal distribution option under both the 1985 tax year provisions and the TRA-1986 provisions.

Normal Life Expectancy

Low Taxpayer

When the last surviving spouse has a normal life expectancy (e.g., ten years), the optimal distribution option for the low taxpayer is the same under TRA-1986 as it was under the 1985 tax year provisions. That is, if the low taxpayer's financial position permits, the final distribution should be postponed either by keeping the retirement fund in the plan or by rolling the fund over into an IRA. When the taxpayer is the last surviving spouse or both the

spouses are surviving at the required distribution date, the optimal distribution option for the low taxpayer is an annuity with 50 percent payments to the spouse. However, if only the spouse is alive at the distribution date, the optimal distribution option varies depending on (1) the age difference between the spouses, (2) whether the taxpayer has elected distribution at the age of 65, and (3) the configuration of the plan variables (See Table XXV). But, when the last surviving spouse has a normal life expectancy and the taxpayer requires income immediately from the retirement plan, the optimal distribution option for the low taxpayer is the LSD option.

Middle Taxpayer

For the middle taxpayer whose last surviving spouse has a normal life expectancy, the change in the income tax provisions under TRA-1986 has apparently resulted in a shift in the optimal distribution option. Generally, if the taxpayer's financial position allows, the final distribution should be postponed under TRA-1986. But, the optimal distribution option varied under the 1985 tax year provisions depending on whether the taxpayer had made nondeductible employee contributions to the plan. However, when the spouse survives the taxpayer and there is no age difference between the spouses, the optimal distribution option is the LSD option under both sets of tax provisions. If the final distribution is postponed, the middle taxpayer

should select a lump-sum distribution at the required distribution date if the last surviving spouse has a normal life expectancy. When the middle taxpayer's financial position indicates a need for immediate income from the retirement plan, the optimal distribution option is the LSD option under both sets of tax provisions.

High Taxpayer

When the last surviving spouse has a normal life expectancy, the revision of the income tax provisions under TRA-1986 seems to alter the optimal distribution option for the high taxpayer. Under TRA-1986, the high taxpayer should postpone final distribution by either retaining the retirement fund in the plan or rolling the retirement fund into an IRA. Previously, under the 1985 tax year provisions, the optimal distribution option was the LSD option for the high taxpayer who elected distribution at the age of 65. At the required distribution date, the high taxpayer should elect a lump-sum distribution under TRA-1986 if the last surviving spouse has a normal life expectancy.

Longer Than Normal Life Expectancy

Low Taxpayer And Middle Taxpayer

The optimal distribution option for the low taxpayer and the middle taxpayer appears not to be influenced by the revision of the income tax provisions under TRA-1986 if the last surviving spouse has a longer than normal life

expectancy. If the financial position of the taxpayer permits, the low taxpayer and the middle taxpayer should postpone final distribution either by leaving the fund in the retirement plan or by rolling the retirement fund balance over into an IRA. At the required distribution date, an annuity should be selected. For the taxpayer in the low profile or middle profile whose financial position requires immediate income from the retirement plan, the taxpayer should elect an annuity if the last surviving spouse has a longer than normal life expectancy.

If only one spouse is surviving at the required distribution date, a single life annuity should be issued. However, if the taxpayer is expected to be the last surviving spouse, an annuity with 50 percent payments to the spouse should be selected. But, if the spouse is expected to be the last surviving spouse, an annuity with 100 percent payments to the spouse should be selected.

High Taxpayer

However, the revision of the tax provisions under TRA-1986 seems to cause a change in the optimal distribution option for the high taxpayer when the last surviving spouse has a longer than normal life expectancy. The high taxpayer, if his or her financial position allows, should postpone final distribution under both sets of tax provisions either by keeping the retirement fund in the plan or by rolling the retirement fund over into an IRA. But, the

final distribution option appears to be altered by the revision of the income tax provisions under TRA-1986 for the taxpayer who elects to retain the retirement fund balance in his or her plan. The high taxpayer under the TRA-1986 provisions should select an annuity at the required distribution date if the last surviving spouse has a longer than normal life expectancy. In contrast, the high taxpayer under the 1985 tax year provisions should have selected either an annuity or a lump-sum distribution depending on whether both spouses were alive at the distribution date and whether the taxpayer had pre-1974 participation in the plan or made nondeductible employee contributions to the plan. The annuity features are the same as the ones discussed above.

If the high taxpayer will need some income from the retirement plan immediately and the last surviving spouse has a longer than normal life expectancy, the revision of the tax provisions as a result of the enactment of TRA-1986 apparently causes a shift in the optimal distribution option. If the spouse is expected to be the last surviving spouse, the optimal distribution option under TRA-1986 for the high taxpayer is the AN-100 option, but the optimal distribution option under the 1985 tax year provisions was the LSD option. However, if the taxpayer is expected to be the last surviving spouse, the optimal distribution option is the AN-50 option under both sets of tax provisions.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The dual objectives of this study were (1) to develop decision guidelines in selecting qualified retirement plan distribution options and (2) to evaluate the impact of recent income and estate tax legislation on these decision guidelines. A deterministic computer simulation model was formulated to perform the analysis for this research. The model permitted the assessment of the distribution options of qualified retirement plans under various taxpayer characteristics with different retirement plan variables.

Summary Of The Study Findings

In general, the results of the analysis of the distribution options under qualified retirement plans indicate that the tax provisions can be considered as an important factor in the selection by the taxpayer of the appropriate distribution option. Also, the findings of this research indicate that the changes in the tax laws can cause a shift in the optimal distribution option depending on the taxpayer profile and the life expectancies of the taxpayer and the spouse.

Impact Of Tax Provisions On The
Distribution Option

Specifically, the different income tax treatments for several of the available distribution options have a material effect on the amount bequeathed to the taxpayer's beneficiaries. This is especially true if the taxpayer and the spouse have shorter than normal life expectancies. The income tax procedure of postponing the payment of income taxes on the earnings of an IRA during the rollover period or on the earnings of the retirement fund if distribution is delayed until the age of 70 1/2, results in either the IRA option or the option to leave the fund balance in the retirement plan to be the optimal distribution option, if both spouses die before the required distribution date, regardless of the taxpayer profiles or plan variable configurations examined in this research.

Even when the last surviving spouse has a normal life expectancy or longer than a normal life expectancy, the income tax treatment related to the IRA option or the option to retain the fund balance in the retirement plan substantially favors these options over either the LSD option or the annuity option. For the taxpayer whose financial position permits postponement of the final distribution of the retirement fund balance either by retaining the balance in the plan or by rolling the balance over into an IRA, the decision to delay the final distribution is the preferred option for the majority of the cases examined in

this research. Table XXVI lists the few cases for which delaying the final distribution is not the optimal distribution option. The table also presents the appropriate distribution option that should be selected for these exceptions to the general rule.

In the cases presented in Table XXVI, one or a combination of the following factors seem to have sufficient influence on the amount to be bequeathed to the beneficiaries in order to counteract the preferential income tax treatment allowed if there is a delay in the final distribution of the qualified retirement fund either by retaining the fund balance in the plan or by rolling the fund over into an IRA: (1) the ten-year averaging method permitted to be used in determining the amount of income taxes to be paid if the LSD option is selected, (2) the income tax treatment allowed depending on the configuration of the retirement plan variables (e.g., pre-1974 participation and nondeductible employee contributions to the plan), and (3) certain characteristics of the taxpayer profile (e.g., annual earnings rates or annual consumption needs).

Distribution Option At Required

Distribution Date

Because the ten-year averaging method available under the LSD option normally results in a smaller effective income tax rate than is feasible under an annuity option,

TABLE XXVI
EXCEPTIONS TO GENERAL RULE--POSTPONEMENT
OF DISTRIBUTION

Tax Provisions	Taxpayer	Taxpayer's Life Expectancy	Spouse's Life Expectancy	Age Difference Between Spouses	Optimal Distribution Option
1985 Tax Year	High	2	2		LSD
	Low	2	10	01,2	LSD
	Middle	2	10	0	LSD
	Middle	2	10	5	LSD
	High	2	10	0	LSD
	High	2	10	5	LSD
	High	2	20	10	LSD
	Middle	10	23		LSD
	High	10	2		LSD
	Middle	10	10 ³		LSD
	High	10	10		LSD
TRA-1986-- With 10-Year Averaging And Capital Gains	High	2	2		LSD
	Low	2	10	02,4	LSD
	Middle	2	10	0	LSD
	High	2	10	05	LSD
TRA-1986-- Without 10- Year Averag- ing And Capital Gains	High	2	2		LSD
	Middle	2	10	0	LSD
	High	2	10	06	LSD

¹ IRA-INV if the taxpayer has no pre-1974 participation but has nondeductible employee contributions to the retirement plan

²IRA-AN if the taxpayer has neither pre-1974 participation nor nondeductible employee contributions to the retirement plan

³IRA-INV if the taxpayer has nondeductible employee contributions to the retirement plan

⁴If the taxpayer has no pre-1974 participation but has nondeductible employee contributions to the retirement plan, the difference between the LSD option and the IRA-INV option is less than \$70

⁵IRA-INV if taxpayer has neither pre-1974 participation nor nondeductible employee contributions to the retirement plan

⁶IRA-INV if the taxpayer does not have any nondeductible employee contributions to the retirement plan

the taxpayer or the spouse should select at the required distribution date a lump-sum distribution if the last surviving spouse has either a shorter than normal life expectancy or a normal life expectancy. However, when the last surviving spouse has a longer than normal life expectancy, in general, the taxpayer or the spouse should select the annuity option at the required distribution date. Apparently, the generally greater implied earnings rate of the annuity option over the earnings rate available under the LSD option in this research is sufficient to counteract the tax advantage that the LSD option has over the annuity option. The annuity provisions to be selected will vary depending on (1) whether both spouses are alive at the required distribution date and (2) which spouse is the last surviving spouse.

However, there are several exceptions to the above general rule under the 1985 tax year provisions. If the high taxpayer is the last surviving spouse, the taxpayer should elect the LSD option unless the taxpayer has neither pre-1974 participation in the plan nor nondeductible employee contributions to the plan. It appears that the additional reduction in the income taxes paid as the result of either pre-1974 participation or nondeductible employee contributions under the LSD option is more than enough to counterbalance the difference between the implied earnings rate of the annuity and the LSD investment's earnings rate.

Further, when the high spouse survives the taxpayer,

the LSD option is preferred over an annuity option. Since the annuity election, which results in the maximum total accumulated savings over the spouse's life (the AN-100 option), has the same earnings rate implied in that annuity as is available for investment purposes for the high taxpayer (nine percent), there is no difference between the earnings rates to assist in counteracting the tax advantage of the LSD option over the annuity option. Therefore, the LSD option is preferred by the high spouse who has a longer than normal life expectancy.

Distribution At The Age Of 65--Without
IRA Option

For the situation in which the taxpayer's financial position requires immediate income from the qualified retirement plan, the reduced effective income tax rate as a result of electing the ten-year averaging method, which is allowed only for the LSD option, seems to result in the LSD option being the optimal distribution option when the last surviving spouse has either a shorter than normal life expectancy or a normal life expectancy.

However, when the last surviving spouse has a longer than normal life expectancy, in general, the optimal distribution option is an annuity. This appears to occur because the larger earnings rate available under the annuity option is sufficient to offset the tax advantage that the LSD option has over the annuity option when there is a

relatively long annuity distribution period. Because the amount of the annual annuity receipts will differ depending on the amount of receipts that will continue to be paid to the spouse after the taxpayer's death, the annuity option which is optimal will vary depending on which spouse is the last surviving spouse.

There are two exceptions to the above general rule. If the high taxpayer's spouse is the last surviving spouse, the optimal distribution option is the LSD option under the 1985 tax year provisions. However, when the spouse is the last surviving spouse, the annuity election that results in the maximum total accumulated savings over the spouse's life (the AN-100 option) has the same earnings rate implied in the annuity as is available on investments by the high taxpayer (nine percent). Thus, when the difference between the effective tax rate under the LSD option over an annuity option is relatively large and the implied earnings rates are the same, the LSD option is the optimal distribution option.

Spouse Elects Distribution Option

If the spouse elects the distribution option after the taxpayer's death, the income tax advantage of the LSD option over the annuity option tends to favor the LSD option unless the spouse has a longer than normal life expectancy. However, there is an exception to the above general rule under the TRA-1986 provisions when the middle spouse has

a normal life expectancy and there is a five-year age difference between the spouses. In this situation, the change in the income tax rate applied to the lump-sum distribution from an IRA (IRA-INV option) under TRA-1986 for the middle spouse encourages the rolling over of the fund balance into an IRA and then taking the lump-sum distribution from the IRA (IRA-INV) at the distribution date.

Impact Of Tax Law Changes On The
Distribution Option

The change in the income tax provisions by TRA-1986 appears to cause some shift in the optimal distribution option for the taxpayers investigated in this study. One of the changes that appears to be the result of TRA-1986, is that a majority of the taxpayers who should select the LSD option under the 1985 tax provisions now should not elect that option under the TRA-1986 provisions (See Table XXVI). The shift does not appear to be the result of the income taxes paid on the lump-sum distribution but rather as a result of the income taxes paid when the IRA-INV option is elected.

Even though, TRA-1986 repealed the regular income averaging method, income taxes paid at the required distribution date, when a lump-sum distribution from the IRA (IRA-INV) is selected, are considerably less for both the middle taxpayer and the high taxpayer than these taxpayers

paid using the regular income averaging method under the 1985 tax year provisions. That is, the tax rate applied to the IRA distribution under TRA-1986 is considerably lower than the tax rate that was applied under the 1985 tax year provisions. This lower income tax liability under TRA-1986 apparently is sufficient to shift the optimal distribution option from the LSD option to the IRA-INV option for the middle taxpayer.

However, the lower income taxes paid under TRA-1986, which results in a larger amount to be invested after the IRA distribution than was feasible under the 1985 tax year provisions, by the high taxpayer will increase the amount of the taxable estate and thus, increase the estate tax liability. This occurs because TRA-1986 did not revise the applicable estate tax rates. Even with the increase in the amount of estate taxes to be paid, the amount of the decrease in income taxes to be paid still seems to cause the shift from the LSD option to the IRA-INV option.

In addition, the substantial decrease in the income tax rate applicable for the high taxpayer under the TRA-1986 provisions as compared to the 1985 tax year provisions (i.e., 31 vs. 50 percent) has resulted in two shifts in the optimal distribution option when the taxpayer cannot postpone the final distribution of the retirement fund (See Tables XX and XXI--Chapter V). The lower income tax rate applicable to annuities under TRA-1986 appears to be sufficient to permit the shift of the optimal distribution

option from the LSD option to the AN-100 option for the high taxpayer who cannot postpone the final distribution from his or her retirement plan.

Further, the reduced income tax rate applicable to the annuity receipts for the high spouse under the TRA-1986 provisions as compared to the income tax rate applicable under the 1985 tax year provisions also alters the optimal distribution from the LSD option to the AN option when the spouse has a longer than normal life expectancy and there is a ten-year age difference between the spouses.

Since the taxpayers in this research were considered to be over the age of 50 on January 1, 1986, it has been assumed that the taxpayer would elect the ten-year income averaging method and the capital gain treatment where applicable, if these options resulted in lower income taxes than the five-year income averaging method, which is the only method available to all other taxpayers electing the LSD option under TRA-1986. To determine if the use of only the five-year income averaging method would cause a change in the selection of the LSD option, the TRA-1986 model for the LSD option was run with only the five-year income averaging method. There was only one change in the optimal distribution option as a result of limiting the tax treatment of the LSD option to the five-year income averaging method. In the situation in which the low taxpayer has the following characteristics: (1) the taxpayer has a two-year life expectancy, (2) spouse has a ten-year life expectancy,

(3) there is no age difference between the spouses, and (4) the taxpayer has pre-1974 participation in the plan, the optimal distribution option shifts from the LSD option to either the IRA-INV option or the IRA-AN option depending on whether the taxpayer has made nondeductible employee contributions to the plan.

Significance Of The Findings

Tax Planning

This study clearly indicates the importance of tax planning when contemplating distributions from a qualified retirement plan. The different income tax treatments depending on the plan variables and the distribution option selected combined with the taxpayer's variables can result in over a \$70,000 difference and over a \$140,000 difference in the amount bequeathed to the beneficiaries for the low taxpayer and the middle taxpayer, respectively, as the result of the retirement plan.

This study also indicates the importance of considering more than one variable when determining the distribution option to be selected. All variables examined in this research other than the percentage of the assets owned by the spouse appear to have at least some effect on the distribution option which should be selected by the taxpayer. However, a rather surprising outcome of the analysis is that the percentage of assets owned by the spouse appears not to affect the optimal distribution option

even though the percentage of assets owned by the spouse does change the amount available to the beneficiaries.

Further, this study has shown that the tax provisions in effect when the distribution from the retirement plan is selected can influence the amount available to the beneficiaries (e.g., as much as a \$200,000 difference for the high taxpayer). Another surprising outcome of the analysis of this research is that the repeal by TRA-1986 of the regular income averaging method does not result in an increase in the income taxes to be paid when the IRA-INV option is selected. Rather, the "two-tier" tax rate schedule under TRA-1986 actually resulted in the low taxpayer paying approximately the same income taxes and the middle taxpayer and the high taxpayer actually paying considerably less income taxes for the IRA-INV option than was paid under the 1985 tax year provisions using the regular income averaging method.

Another tax planning factor emphasized by this research is that when the taxpayer can elect the tax alternative that results in the lowest income tax liability, each taxpayer should examine all of the tax alternatives before making his or her election. For example, under the TRA-1986 provisions, the low taxpayer and the middle taxpayer examined in this study should select the ten-year income averaging method using the 1986 tax rates for the LSD option, but the high taxpayer will be able to pay lower income taxes if the five-year income averaging method using the

"two-tier" tax rate schedule is elected for the LSD option.

As can be observed in Table XXVI, the revision of the income tax provisions by TRA-1986 reduces the number of situations in which the LSD option should be selected when the taxpayer's financial position permits deferring the final distribution of the retirement fund. Most of the shifts that occurred were from the LSD option to the IRA-INV option. As a result, in almost all of the cases examined in this study under TRA-1986, the taxpayer should elect to postpone the final distribution by either retaining the retirement fund in the plan or rolling the retirement fund over into an IRA.

Tax Policy

However, the postponement of the final distribution may have income tax policy implications. The encouragement to defer the final distribution of the retirement fund also postpones the taxpayer's income tax liability (i.e., the government's income tax revenue).

There are actually two types of income tax delays involved with postponing the final distribution of the retirement fund as compared to the immediate payment of income taxes (governmental receipts) if the LSD option is elected. First, the income taxes paid (received) on the final distribution may be delayed at least six years and even longer if an annuity is selected on the required distribution date. Secondly, the earnings that accumulate

as the result of investing the after income tax lump-sum distribution are subject to income taxes as earned, but if the final distribution is postponed, there is no tax on the accumulated earnings until the taxpayer receives the distribution.

The deferral of the payment of income taxes that appears to be encouraged by TRA-1986 may result in a reduction in the possible current income tax revenue that is available not only to the federal government but also for the state and local governments that base their income tax collections on the federal taxable income.

In addition, the lower income taxes paid under TRA-1986 by the high taxpayer may have estate tax implications. One of the objectives of estate taxes is to redistribute the wealth. Even though the dollar amount of estate taxes to be paid by the high taxpayer will increase because of the larger accumulation of assets that is available under TRA-1986 as a result of the lower income tax liabilities, the amount that is bequeathed to the taxpayer's beneficiaries also may substantially increase. Thus, the high taxpayer's beneficiaries will actually inherit considerably more than was possible under the 1985 tax year provisions, but, the amount bequeathed to the beneficiaries of the low taxpayer and the middle taxpayer does not appear to substantially change as a result of the revision of the income tax provisions under TRA-1986.

Another tax policy implication emphasized in this research is that TRA-1986 as related to distributions from qualified retirement plans does not appear to simplify or to ease the income tax computations. In fact certain tax provisions under TRA-1986 actually may be perceived to result in more complex tax computational procedures than were involved in the previous tax provisions. For example, the procedure that requires the ten-year income averaging method to be determined based on the income tax rates in effect in 1986 instead of the current year's income tax rates may be considered to be more complicated by the majority of retiring taxpayers than the procedures in effect under the 1985 tax year provisions. Also, the repeal of the three-year basis rules may also be perceived as increasing the complexity of the determination of the income tax liability for the taxpayer who has a relatively small nondeductible employee contribution to the qualified retirement plan.

Still another tax policy implication of this research is that the TRA-1986 provisions may result in a shift of the income tax burden depending on the distribution option selected. For example, if the taxpayer selects the distribution option which will maximize the amount bequeathed to the beneficiaries (i.e., either by retaining the retirement fund in the plan or by rolling the fund over into an IRA), this research indicates that the tax burden for the low taxpayer remains about the same, while the tax burden for both the middle taxpayer and the high taxpayer

decreases considerably. However, if the LSD option is elected under the TRA-1986 provisions, this research reveals that the tax burden for the low taxpayer and the middle taxpayer remains basically the same, but the tax burden increases for the high taxpayer.

Conclusions And Recommendations

In reviewing Congressional literature it is quickly discovered that it is very difficult if not impossible to determine the specific objectives or intended impact of any particular tax provision. This research study as applied to distributions from qualified retirement plans provides evidence that income tax provisions affect to some extent all taxpayers who have qualified retirement plans regardless of the taxpayer's characteristics. In addition, this study has provided some indication that several reform provisions have some impact on the distribution options for all taxpayers with qualified retirement plans, but there is a greater impact on the middle taxpayer and the high taxpayer than on the low taxpayer.

This study also produced some potentially important implications for taxpayers with qualified retirement plans who are contemplating retirement. This study has revealed the importance of tax planning in order to accomplish the taxpayer's retirement and estate goals. As discussed previously, not considering the relevant tax provisions can result in substantially altering the desired retirement and

estate goals of an individual. For example, the selection of a distribution option without considering the relevant tax provisions and the taxpayer's characteristics can result in considerably less of an estate being bequeathed to the beneficiaries.

The above example emphasizes the importance to taxpayers of determining the effect of the many inter-related tax provisions and the taxpayer's characteristics. A deterministic computer simulation model, such as the one developed for this research, should provide a valuable decision-making tool. Different assumptions related to the taxpayer's characteristics (e.g., life expectancy of the taxpayer, life expectancy of the spouse, earnings rate and consumption needs) and the retirement plan variables (i.e., pre-1974 participation and nondeductible employee contributions) can be easily handled by the computer program to predict the potential amount that would be available to the taxpayer's beneficiaries.

Suggestions For Further Research

Research regarding the impact of income and estate tax provisions on distributions from qualified retirement plans prior to the age of 65 would be a natural extension of this study. For example, what was the impact of the tax revisions under TRA-1986 on the optimal distribution option to be selected if the taxpayer elects distribution at the age of 59 1/2? Or possibly, what would be the impact of the

tax revisions under TRA-1986 on distributions made prior to the age of 59 1/2?

Another research study could investigate the optimal distribution option for qualified retirement plans under TRA-1986 using a decision criterion other than the maximum amount bequeathed to the taxpayer's beneficiaries. For example, what would be the optimal distribution option for a qualified retirement plan if it is the desire of the taxpayer to have the maximum amount available to be spent over his or her lifetime?

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APPENDIX A

TAXPAYER ELECTS DISTRIBUTION

1985

```
1000 REM To sort so that proper taxpayer information is printed on output
1010 IF LLET<LES THEN GOTO 1020 ELSE GOTO 1200
1020 IF TAXPAYER=1 THEN GOTO 1030 ELSE GOTO 1360
1030 LPRINT "Taxpayer'S Life Expectancy";
1040 LPRINT LLET
1050 LPRINT "Spouse's Life Expectancy";
1060 LPRINT LES
1070 LPRINT "Employee's Contribution";
1080 LPRINT CONTR
1090 LPRINT "Age Differences Between Spouses";
1100 LPRINT ADBS
1110 LPRINT "Pre-1974 Plan Participation";
1120 LPRINT P74
1130 LPRINT "Other Assets Owned By Spouse";
1140 LPRINT SA
1150 LPRINT "Age Taxpayer Selects For Distribution";
1160 LPRINT AGE
1170 LPRINT
1180 LPRINT
1190 GOTO 1360
1200 IF TAXPAYER=1 THEN GOTO 1210 ELSE GOTO 1360
1210 LPRINT "Taxpayer's Life Expectancy";
1220 LPRINT LLET
1230 LPRINT "Spouse's Life Expectancy";
1240 LPRINT LES
1250 LPRINT "Employee's Contribution";
1260 LPRINT CONTR
1270 LPRINT "Pre-1974 Plan Participation";
1280 LPRINT P74
1290 LPRINT "Other Assets Owned By Spouse";
1300 LPRINT SA
1310 LPRINT "Age Taxpayer Selects For Distribution";
1320 LPRINT AGE
1330 LPRINT
1340 LPRINT
1350 REM To sort because options vary depending on the distribution age
1360 IF AGE=65 THEN GOTO 1370 ELSE GOTO 2110
1370 FOR OPT=1 TO 6
1380 REM opt=1 => Lump sum distribution
1390 IF OPT=1 THEN GOSUB 2520 ELSE GOTO 1420
1400 GOTO 1540
1410 REM opt=2 => Annuity with 100% payment to spouse
1420 IF OPT=2 THEN GOSUB 4890 ELSE GOTO 1450
1430 GOTO 1540
1440 REM opt=3 => Annuity with 50% payment to spouse
1450 IF OPT=3 THEN GOSUB 5840 ELSE GOTO 1480
1460 GOTO 1540
1470 REM opt=4 => IRA--lump sum distribution is invested
1480 IF OPT=4 THEN GOSUB 7080 ELSE GOTO 1520
1490 GOTO 1540
```

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1500 REM opt=5 => IRA--annuity with 100% payment to spouse
1510 REM opt=6 => IRA--annuity with 50% payment to spouse
1520 IF OPT=5 THEN GOSUB 8070 ELSE GOSUB 9730
1530 GOTO 1540
1540 LPRINT "Taxpayer";
1550 LPRINT TAXPAYER;
1560 LPRINT "Option";
1570 LPRINT OPT;
1580 LPRINT "Income Tax";
1590 LPRINT IT;
1600 LPRINT "Total Tax";
1610 LPRINT TT;
1620 LPRINT "Amount Bequeathed To Beneficiary";
1630 LPRINT TABTB
1640 LPRINT
1650 IF OPT=1 THEN TABTB1=TABTB ELSE GOTO 1670
1660 GOTO 1740
1670 IF OPT=2 THEN TABTB2=TABTB ELSE GOTO 1690
1680 GOTO 1740
1690 IF OPT=3 THEN TABTB3=TABTB ELSE GOTO 1710
1700 GOTO 1740
1710 IF OPT=4 THEN TABTB4=TABTB ELSE GOTO 1730
1720 GOTO 1740
1730 IF OPT=5 THEN TABTB5=TABTB ELSE TABTB6=TABTB
1740 NEXT
1750 LPRINT
1760 REM Lines 1272-1396--To determine the optimal distribution option if d
distribution is at age 65
1770 IF TABTB1>TABTB2 THEN GOTO 1780 ELSE GOTO 1850
1780 IF TABTB1>TABTB3 THEN GOTO 1790 ELSE GOTO 1850
1790 IF TABTB1>TABTB4 THEN GOTO 1800 ELSE GOTO 1860
1800 IF TABTB1>TABTB5 THEN GOTO 1810 ELSE GOTO 1870
1810 IF TABTB1>TABTB6 THEN GOTO 1820 ELSE GOTO 1880
1820 LPRINT "Lump Sum Distribution";
1830 LPRINT TABTB1
1840 GOTO 2460
1850 IF TABTB2>TABTB3 THEN GOTO 1860 ELSE GOTO 1920
1860 IF TABTB2>TABTB4 THEN GOTO 1870 ELSE GOTO 1920
1870 IF TABTB2>TABTB5 THEN GOTO 1880 ELSE GOTO 1930
1880 IF TABTB2>TABTB6 THEN GOTO 1890 ELSE GOTO 1940
1890 LPRINT "Annuity With 100% Payment To Spouse";
1900 LPRINT TABTB2
1910 GOTO 2460
1920 IF TABTB3>TABTB4 THEN GOTO 1930 ELSE GOTO 1980
1930 IF TABTB3>TABTB5 THEN GOTO 1940 ELSE GOTO 1980
1940 IF TABTB3>TABTB6 THEN GOTO 1950 ELSE GOTO 1990
1950 LPRINT "Annuity With 50% Payment To Spouse";
1960 LPRINT TABTB3
1970 GOTO 2460
1980 IF TABTB4>TABTB5 THEN GOTO 1990 ELSE GOTO 2030
1990 IF TABTB4>TABTB6 THEN GOTO 2000 ELSE GOTO 2030
2000 LPRINT "After Tax IRA Distribution Is Invested";
2010 LPRINT TABTB4
2020 GOTO 2460
2030 IF TABTB5>TABTB6 THEN GOTO 2040 ELSE GOTO 2070
2040 LPRINT "IRA Is Distributed As An Annuity With 100% Payment To Spouse";

2050 LPRINT TABTB5
2060 GOTO 2460
2070 LPRINT "IRA Is Distributed As An Annuity With 50% Payment To Spouse";
2080 LPRINT TABTB6
2090 GOTO 2460
2100 REM Options if distribution is at age 70 1/2
2110 FOR OPT=1 TO 3
2120 REM Opt=1 => Lump sum distribution is invested
2130 IF OPT=1 THEN GOSUB 2520 ELSE GOTO 2170

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2140 GOTO 2180
2150 REM Opt=2 => Annuity with 100% payment to spouse
2160 REM Opt=3 => Annuity with 50% payment to spouse
2170 IF OPT=2 THEN GOSUB 4890 ELSE GOSUB 5840
2180 LPRINT "Taxpayer";
2190 LPRINT TAXPAYER;
2200 LPRINT "Option";
2210 LPRINT OPT;
2220 LPRINT "Income Tax";
2230 LPRINT IT;
2240 LPRINT "Total Tax";
2250 LPRINT TT;
2260 LPRINT "Amount Bequeathed To Beneficiary";
2270 LPRINT TABTB
2280 LPRINT
2290 IF OPT=1 THEN TABTB1=TABTB ELSE GOTO 2310
2300 GOTO 2320
2310 IF OPT=2 THEN TABTB2=TABTB ELSE TABTB3=TABTB
2320 NEXT
2330 LPRINT
2340 REM Lines 1484-1540--To determine the optimal distribution option if d
distribution is at age 70 1/2
2350 IF TABTB1>TABTB2 THEN GOTO 2360 ELSE GOTO 2400
2360 IF TABTB1>TABTB3 THEN GOTO 2370 ELSE GOTO 2400
2370 LPRINT "Lump Sum Distribution";
2380 LPRINT TABTB1
2390 GOTO 2460
2400 IF TABTB2>TABTB3 THEN GOTO 2410 ELSE GOTO 2440
2410 LPRINT "Annuity With 100% Payment To Spouse";
2420 LPRINT TABTB2
2430 GOTO 2460
2440 LPRINT "Annuity With 50% Payment To Spouse";
2450 LPRINT TABTB3
2460 LPRINT
2470 LPRINT
2480 LPRINT
2490 RETURN
2500 REM Start of Opt=1 program
2510 REM To sort because of the different tax treatments if there were pre-
1974 contributions
2520 IF P74=0 THEN GOTO 2530 ELSE GOTO 3590
2530 ASAT=0: ASAS=0: SILS=0
2540 REM To sort because the tax treatment depends on age
2550 IF AGE=65 THEN GOTO 2570 ELSE GOTO 3280
2560 REM Lines 1556-1616--Input data
2570 IF TAXPAYER=1 THEN GOSUB 2590 ELSE GOSUB 2610
2580 GOTO 2670
2590 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=31615.21: OTI=1000: OA=50
000!:
2600 RETURN
2610 IF TAXPAYER=2 THEN GOSUB 2630 ELSE GOSUB 2650
2620 RETURN
2630 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.25: NAI=63230.48: OTI=12000!:
OA=150000!:
2640 RETURN
2650 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.5: NAI=126460.83#: OTI
=170000!: OA=2000000!
2660 RETURN
2670 IF CONTR=1 THEN GOSUB 2690 ELSE GOSUB 2710
2680 GOTO 2740
2690 CE=0:
2700 RETURN
2710 CE=.12:
2720 RETURN
2730 REM To determine the longest life expectancy of spouses
2740 IF LLET<LES THEN LLE=LES ELSE LLE=LLET

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2750 IF AGE=65 THEN RL=17 ELSE RL=13
2760 REM Lines 1628-1660--To determine the regular income averaging taxes
2770 CTI=OTI+(FB*(1-CE))
2780 AI=((CTI-NAI)*.25)+NAI
2790 TI=AI
2800 IF TI<=62450! THEN GOSUB 11680 ELSE GOSUB 12360
2810 TAXAI=ITIR
2820 TI=NAI
2830 IF TI<=62450! THEN GOSUB 11680 ELSE GOSUB 12360
2840 TAXNAI=ITIR
2850 ITIA=((TAXAI-TAXNAI)*3)+TAXAI
2860 REM Lines 1664-1672--To determine the income taxes on only the other t
axable income
2870 TI=OTI
2880 IF TI<=62450! THEN GOSUB 11680 ELSE GOSUB 12360
2890 TOTI=ITIR
2900 REM Lines 1676-1724--To determine the 10-year averaging taxes
2910 TLSD=((FB*(1-CE))+2390)
2920 IF TLSD>70000! THEN GOTO 2930 ELSE GOTO 2970
2930 TI=((FB*(1-CE)*.1)+2390)
2940 IF TI<=29970 THEN GOSUB 12020 ELSE GOSUB 12480
2950 IT10A=(ITIR*10)+TOTI
2960 GOTO 3050
2970 IF TLSD<=20000 THEN GOTO 3000 ELSE GOTO 2980
2980 MDA=(10000-((TLSD-20000)*.2))
2990 GOTO 3010
3000 MDA=10000
3010 TI=((TLSD-MDA)*.1)+2390
3020 IF TI<=29970 THEN GOSUB 12020 ELSE GOSUB 12480
3030 IT10A=(ITIR*10)+TOTI
3040 REM Lines 1728-1732--To determine income taxes if 10-year and regular
averaging methods are not elected
3050 TI=CTI
3060 IF TI<=62450! THEN GOSUB 11680 ELSE GOSUB 12360
3070 REM Lines 1736-1748--To determine the lowest income taxes from regular
, regular averaging and 10-year averaging
3080 IF ITIA<ITIR THEN GOTO 3090 ELSE GOTO 3110
3090 IF ITIA<IT10A THEN ITL=ITIA ELSE GOTO 3110
3100 GOTO 3130
3110 IF ITIR<IT10A THEN ITL=ITIR ELSE ITL=IT10A
3120 REM Income tax which relates only to retirement fund distribution
3130 ITLS=ITL-TOTI
3140 REM After tax investment
3150 IVLS=FB-ITLS
3160 REM Lines 1760-1776--To determine the amount of accumulated savings re
lated to the plan over lifetime
3170 FOR I=1 TO LLE
3180 SILS=SILS+(IVLS*RS*(1-TRI)*S*(1+RS*(1-TRI))^(LLE-I))
3190 NEXT
3200 ASILS=IVLS+SILS
3210 AS=ASILS
3220 REM Total income taxes
3230 IT=ITLS+(IVLS*RS*TRI*LLE)+((ASILS-IVLS-(IVLS*RS*(1-TRI)*S*LLE))/(1-TRI
))*TRI
3240 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
3250 GOSUB 12640
3260 RETURN
3270 REM Start of calculations if distribution is at age 70 1/2
3280 YR=6: RP=9.000001E-02:
3290 REM Lines 1796-1856--Input data
3300 IF TAXPAYER=1 THEN GOTO 3310 ELSE GOTO 3330
3310 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=42576.8: OTI=1000: OA=500
00!:
3320 GOTO 3370
3330 IF TAXPAYER=2 THEN GOTO 3340 ELSE GOTO 3360

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3340 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.25: NAI=85152.68: OTI=12000!:
OA=150000!:
3350 GOTO 3370
3360 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.5: NAI=170306.27#: OTI
=170000!: OA=2000000!:
3370 IF CONTR=1 THEN GOSUB 3390 ELSE GOSUB 3410
3380 GOTO 3440
3390 CE=0:
3400 RETURN
3410 CE=.12:
3420 RETURN
3430 REM To sort to determine if taxpayer is alive at age 70 1/2
3440 IF LLET>3 THEN GOTO 3460 ELSE GOTO 3500
3450 REM Lines 1864-1880--To determine retirement fund balance accumulated
thru age of 70 1/2
3460 FBR=FB*(1+RP)^YR
3470 FB=FBR
3480 IF LLET<LES THEN LLE=LES-YR ELSE LLE=LLET-YR
3490 GOTO 2770
3500 IF LES=2 THEN GOTO 3520 ELSE RETURN
3510 REM Lines 1884-1892--To determine retirement fund balance accumulated
until taxpayer's death and spouse's death
3520 YRD=2: RP=9.000001E-02
3530 FBD=FB*(1+RP)^YRD
3540 AS=FBD
3550 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
3560 GOSUB 12640
3570 RETURN
3580 REM Start of program if pre-1974 contributions=25%
3590 ASAT=0: ASAS=0: SILS=0
3600 REM To sort because age at distribution affects annuity receipts
3610 IF AGE=65 THEN GOTO 3630 ELSE GOTO 4530
3620 REM Lines 1912-1972--Input data if age=65 and pre-1974 contributions=2
5%
3630 IF TAXPAYER=1 THEN GOSUB 3650 ELSE GOSUB 3670
3640 GOTO 3730
3650 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=31615.21: OTI=1000: P74=.
25: OA=50000!:
3660 RETURN
3670 IF TAXPAYER=2 THEN GOSUB 3690 ELSE GOSUB 3710
3680 RETURN
3690 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.25: NAI=63230.48: OTI=12000!:
P74=.25: OA=150000!:
3700 RETURN
3710 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.5: NAI=126460.83#: OTI
=170000!: OA=2000000!: P74=.25:
3720 RETURN
3730 IF CONTR=1 THEN GOSUB 3750 ELSE GOSUB 3770
3740 GOTO 3800
3750 CE=0:
3760 RETURN
3770 CE=.12:
3780 RETURN
3790 REM To determine the longest life expectancy of spouses
3800 IF LLET<LES THEN LLE=LES ELSE LLE=LLET
3810 IF AGE=65 THEN RL=17 ELSE RL=13
3820 REM Lines 1984-2016--To determine the regular income averaging taxes
3830 CTI=OTI+(FB*(1-CE)*(1-P74))+(FB*(1-CE)*P74*.4)
3840 AI=((CTI-NAI)*.25)+NAI
3850 TI=AI
3860 IF TI<=62450! THEN GOSUB 11680 ELSE GOSUB 12360
3870 TAXAI=ITIR
3880 TI=NAI
3890 IF TI<=62450! THEN GOSUB 11680 ELSE GOSUB 12360
3900 TAXNAI=ITIR

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3910 ITIA=((TAXAI-TAXNAI)*3)+TAXAI
3920 REM Lines 2020-2028--To determine the income taxes on only the other t
axable income
3930 TI=OTI
3940 IF TI<=62450! THEN GOSUB 11680 ELSE GOSUB 12360
3950 TOTI=ITIR
3960 REM Lines 2032-2080--To determine the 10-year averaging taxes if capit
al gain treatment is not elected
3970 TLSD=(FB*(1-CE))+2390
3980 IF TLSD>70000! THEN GOTO 3990 ELSE GOTO 4030
3990 TI=((FB*(1-CE)*.1)+2390)
4000 IF TI<29970 THEN GOSUB 12020 ELSE GOSUB 12480
4010 T10A=(ITIR*10)+TOTI
4020 GOTO 4110
4030 IF TLSD<=20000 THEN GOTO 4060 ELSE GOTO 4040
4040 MDA=(10000-((TLSD-20000)*.2))
4050 GOTO 4070
4060 MDA=10000
4070 TI=((TLSD-MDA)*.1)+2390
4080 IF TI<29970 THEN GOSUB 12020 ELSE GOSUB 12480
4090 T10A=(ITIR*10)+TOTI
4100 REM Lines 2084-2092--To determine the tax on the capital gain
4110 TI=(FB*(1-CE)*P74*.4)+OTI
4120 IF TI<62450! THEN GOSUB 11680 ELSE GOSUB 12360
4130 TCGD=ITIR
4140 REM Lines 2096-2148--To determine the 10-year averaging taxes if capit
al gain treatment is elected
4150 TFB=FB*(1-CE)*(1-P74)
4160 IF TFB>=70000! THEN GOTO 4170 ELSE GOTO 4210
4170 TI=(TFB*.1)+2390
4180 IF TI<29970 THEN GOSUB 12020 ELSE GOSUB 12480
4190 TOID=ITIR*10
4200 GOTO 4280
4210 IF TFB<=20000 THEN GOTO 4240 ELSE GOTO 4220
4220 MDA=(10000-((TFB-20000)*.2))
4230 GOTO 4250
4240 MDA=10000
4250 TI=((((FB*(1-CE)*(1-P74))-MDA)*.1)+2390)
4260 IF TI<29970 THEN GOSUB 12020 ELSE GOSUB 12480
4270 TOID=ITIR*10
4280 T10ACG=TCGD+TOID
4290 REM To determine which option is lower--with or without capital gain t
reatment
4300 IF T10A<T10ACG THEN IT10G=T10A ELSE IT10G=T10ACG
4310 REM Lines 2156-2160--To determine regular income taxes
4320 TI=CTI
4330 IF TI<=62450! THEN GOSUB 11680 ELSE GOSUB 12360
4340 REM Lines 2164-2176--To determine the lowest income taxes from regular
, regular averaging and 10-year averaging
4350 IF ITIA<ITIR THEN GOTO 4360 ELSE GOTO 4380
4360 IF ITIA<IT10G THEN ITLS=ITIA-TOTI ELSE GOTO 4380
4370 GOTO 4400
4380 IF ITIR<IT10G THEN ITLS=ITIR-TOTI ELSE ITLS=IT10G-TOTI
4390 REM After tax investment
4400 IVCG=FB-ITLS
4410 REM Line 2184-2200--To determine the amount of savings accumulated rel
ated to the plan over the lives of the taxpayer and the spouse
4420 FOR I=1 TO LLE
4430 SILS=SILS+(IVCG*RS*(1-TRI)*S*(1+RS*(1-TRI))^(LLE-I))
4440 NEXT
4450 ASILS=IVCG+SILS
4460 AS=ASILS
4470 REM Total income tax
4480 IT=ITLS+(IVCG*RS*TRI*LLE)+((ASILS-IVCG-(IVCG*RS*(1-TRI)*S*LLE))/(1-TRI
))*TRI
4490 REM To go to calculate the estate taxes and the amount to be bequeathe

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d to the beneficiaries
4500 GOSUB 12640
4510 RETURN
4520 REM Lines 2216--2280--Input data if age=70 1/2 and pre-1974 contributi
ons=25%
4530 YR=6: RL=13: RP=9.000001E-02:
4540 IF TAXPAYER=1 THEN GOSUB 4560 ELSE GOSUB 4580
4550 GOTO 4640
4560 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=42576.8: OTI=1000!: P74=.
25: OA=50000!:
4570 RETURN
4580 IF TAXPAYER=2 THEN GOSUB 4600 ELSE GOSUB 4620
4590 RETURN
4600 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.25: NAI=85152.68: OTI=12000!:
P74=.25: OA=150000!:
4610 RETURN
4620 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.5: NAI=170306.27#: OTI
=170000!: P74=.25: OA=2000000!
4630 RETURN
4640 IF CONTR=1 THEN GOSUB 4660 ELSE GOSUB 4680
4650 GOTO 4710
4660 CE=0:
4670 RETURN
4680 CE=.12:
4690 RETURN
4700 REM To sort to determine if taxpayer is alive at age 70 1/2
4710 IF LLET>3 THEN GOTO 4730 ELSE GOTO 4800
4720 REM Lines 2288-2292--To determine the retirement fund balance until th
e age of 70 1/2
4730 FBR=FB*(1+RP)^YR
4740 FB=FBR
4750 IF LLET<LES THEN LLE=LES-YR ELSE LLE=LLET-YR
4760 IF AGE=65 THEN RL=17 ELSE RL=13
4770 REM To go to calculate income taxes (lines 1984-2212)
4780 GOTO 3830
4790 REM Lines 2308-2320--To determine the retirement fund balance at the d
eath of the taxpayer and the spouse if before taxpayer reaches age 70 1/2
4800 IF LES=2 THEN GOTO 4810 ELSE RETURN
4810 YRD=2: RP=9.000001E-02:
4820 FBD=FB*(1+RP)^YRD
4830 AS=FBD
4840 IT=0
4850 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
4860 GOSUB 12640
4870 RETURN
4880 REM To start program if Opt=2
4890 ASA=0: ASAS=0
4900 REM Lines 2340-2439--Input data at age 65
4910 IF TAXPAYER=1 THEN GOSUB 4930 ELSE GOSUB 4950
4920 GOTO 5010
4930 FB=70000!: RI=.08: RS=.06: TRI=.15: OA=50000!:
4940 RETURN
4950 IF TAXPAYER=2 THEN GOSUB 4970 ELSE GOSUB 4990
4960 RETURN
4970 FB=140000!: RI=.08: RS=.08: TRI=.25: OA=150000!:
4980 RETURN
4990 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.5: OA=2000000!:
5000 RETURN
5010 IF AGE=65 THEN GOTO 5020 ELSE GOTO 5480
5020 IF CONTR=1 THEN GOSUB 5040 ELSE GOSUB 5090
5030 GOTO 5140
5040 CE=0:
5050 IF TAXPAYER=1 THEN C=3082.24 ELSE GOTO 5070
5060 RETURN
5070 IF TAXPAYER=2 THEN C=5282.1 ELSE C=1942.86

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5080 RETURN
5090 CE=.12:
5100 IF TAXPAYER=1 THEN C=3140.16 ELSE GOTO 5120
5110 RETURN
5120 IF TAXPAYER=2 THEN C=5443.83 ELSE C=2031.96
5130 RETURN
5140 IF LLET<LES THEN GOTO 5150 ELSE GOTO 5200
5150 LLE=LES
5160 IF ADBS=0 THEN RL=17 ELSE GOTO 5180
5170 GOTO 5210
5180 IF ADBS=5 THEN RL=20 ELSE RL=23
5190 GOTO 5210
5200 REM To go to determine the amount of annual annuity receipts
5210 IF RL=17 THEN GOSUB 5390 ELSE GOSUB 5420
5220 REM Inclusion ratio
5230 IR=1-((CE*FB)/(A*RL))
5240 REM Income taxes on annuity receipts
5250 ITA=(A*IR*TRI*LLE)
5260 REM Lines 2452-2464--To determine the amount of the annuity receipts s
aved and accumulated savings
5270 S=(A*(1-(IR*TRI)))-C
5280 FOR I=1 TO LLE
5290 ASA=ASA+(S*(1+RS*(1-TRI))^(LLE-I))
5300 NEXT
5310 ITAS=((ASA-(S*LLE))/(1-TRI))*TRI
5320 REM Total income taxes
5330 IT=ITA+ITAS
5340 AS=ASA
5350 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
5360 GOSUB 12640
5370 RETURN
5380 REM Lines 2488-2504--Calculation of annual annuity receipts
5390 PVOA=8.543629
5400 A=FB/PVOA
5410 RETURN
5420 IF RL=13 THEN PVOA=7.4869 ELSE GOTO 5440
5430 GOTO 5450
5440 IF RL=20 THEN PVOA=9.128549 ELSE PVOA=9.58021
5450 A=FB/PVOA
5460 RETURN
5470 REM Lines 2512-2556--Input data if at age 70 1/2
5480 IF CONTR=1 THEN GOSUB 5500 ELSE GOSUB 5550
5490 GOTO 5610
5500 CE=0:
5510 IF TAXPAYER=1 THEN C=5076.11 ELSE GOTO 5530
5520 RETURN
5530 IF TAXPAYER=2 THEN C=8447.8 ELSE C=2983.16
5540 RETURN
5550 CE=.12:
5560 IF TAXPAYER=1 THEN C=5212.57 ELSE GOTO 5580
5570 RETURN
5580 IF TAXPAYER=2 THEN C=8802.821 ELSE C=3191.59
5590 RETURN
5600 REM To determine if the taxpayer is alive at age 70 1/2
5610 IF LLET>3 THEN GOTO 5630 ELSE GOTO 5760
5620 REM To determine the length of the annuity receipts period
5630 IF LLET<LES THEN LLE=LES-YR ELSE LLE=LLET-YR
5640 REM Lines 2564-2584--To calculate the retirement fund balance at age 7
0 1/2 and the amount of the annual annuity receipts
5650 RL=13: YR=6: RP=9.000001E-02:
5660 FBR=FB*(1+RP)^YR
5670 IF LES=2 THEN GOTO 5680 ELSE GOTO 5700
5680 PVOA=6.74987
5690 GOTO 5710
5700 PVOA=7.4869

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5710 A=FBR/PVOA
5720 FB=FBR
5730 REM To go to calculate income taxes (lines 2444-2484)
5740 GOTO 5230
5750 REM Lines 2592-2604--To determine the retirement fund balance at the d
eath of the taxpayer and the death of the spouse if before the taxpayer rea
ches age 70 1/2
5760 IF LES=2 THEN GOTO 5770 ELSE RETURN
5770 RL=13: YRD=2: RP=9.000001E-02:
5780 FBD=FB*(1+RP)^YRD
5790 AS=FBD
5800 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
5810 GOSUB 12640
5820 RETURN
5830 REM To start Opt=3
5840 ASAT=0: ASAS=0
5850 REM Lines 2620-2708--Input data at age 65
5860 IF TAXPAYER=1 THEN GOSUB 5880 ELSE GOSUB 5900
5870 GOTO 5970
5880 FB=70000!: RI=.08: RS=.06: TRI=.15: OA=50000!:
5890 RETURN
5900 IF TAXPAYER=2 THEN GOSUB 5920 ELSE GOSUB 5940
5910 RETURN
5920 FB=140000!: RI=.08: RS=.08: TRI=.25: OA=150000!:
5930 RETURN
5940 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.5: OA=2000000!:
5950 RETURN
5960 REM To sort because age at distribution affects amount of annual annui
ty receipts
5970 IF AGE=65 THEN GOTO 5980 ELSE GOTO 6540
5980 IF CONTR=1 THEN GOSUB 6000 ELSE GOSUB 6050
5990 GOTO 6110
6000 CE=0:
6010 IF TAXPAYER=1 THEN C=3082.24 ELSE GOTO 6030
6020 RETURN
6030 IF TAXPAYER=2 THEN C=5282.1 ELSE C=1942.86
6040 RETURN
6050 CE=.12:
6060 IF TAXPAYER=1 THEN C=3140.16 ELSE GOTO 6080
6070 RETURN
6080 IF TAXPAYER=2 THEN C=5443.83 ELSE C=2031.96
6090 RETURN
6100 REM To determine which spouse lives the longest
6110 IF LLET<LES THEN GOTO 6130 ELSE GOTO 6210
6120 REM To determine the time period of 100% receipts and the time period
of 50% receipts
6130 LLE=LLET: NPS=LES-LLET
6140 REM Lines 2722-2739--Input data
6150 IF ADBS=0 THEN RL=17 ELSE GOTO 6160
6160 GOTO 6220
6170 IF ADBS=5 THEN RL=20 ELSE GOTO 6180
6180 GOTO 6220
6190 IF ADBS=10 THEN RL=23 ELSE RL=17
6200 GOTO 6220
6210 LLE=LLET: NPS=0: RL=17:
6220 REM To go to calculate the annual annuity receipts
6230 IF RL=17 THEN GOSUB 6450 ELSE GOSUB 6480
6240 REM Inclusion ratio
6250 IR=1-((CE*FB)/(A*RL))
6260 REM Income taxes on annuity
6270 ITA=(A*IR*TRI*LLE)+(.5*A*IR*TRI*NPS)
6280 REM Lines 2752-2780--To determine the amount of the annuity receipts s
aved and accumulated savings
6290 S=(A*(1-(IR*TRI)))^C
6300 FOR I=1 TO LLE

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6310 ASAT=ASAT+(S*(1+RS*(1-TRI))^(LLE-I))*(1+RS*(1-TRI))^NPS
6320 NEXT
6330 FOR J=1 TO NPS
6340 ASAS=ASAS+.5*S*(1+RS*(1-TRI))^(NPS-J)
6350 NEXT
6360 ASA=ASAT+ASAS
6370 ITAS=((ASA-(S*LLE)-(.5*S*NPS))/(1-TRI))*TRI
6380 REM Total income taxes
6390 IT=ITA+ITAS
6400 AS=ASA
6410 REM To go to calculate the estate taxes and the amount bequeathed to the
he beneficiaries
6420 GOSUB 12640
6430 RETURN
6440 REM Lines 2804-2824--Calculation of the amount of annual annuity receipts
6450 PVOA=8.02155
6460 A=FB/PVOA
6470 RETURN
6480 IF RL=13 THEN PVOA=7.10336 ELSE GOTO 6500
6490 GOTO 6510
6500 IF RL=20 THEN PVOA=8.51356 ELSE PVOA=8.88322
6510 A=FB/PVOA
6520 RETURN
6530 REM Lines 2828-2912--Input data if age=70 1/2
6540 IF TAXPAYER=1 THEN GOSUB 6560 ELSE GOSUB 6580
6550 GOTO 6640
6560 FB=70000!: RI=.08: RS=.06: TRI=.15: OA=50000!
6570 RETURN
6580 IF TAXPAYER=2 THEN GOSUB 6600 ELSE GOSUB 6620
6590 RETURN
6600 FB=140000!: RI=.08: RS=.08: TRI=.25: OA=150000!
6610 RETURN
6620 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.5: OA=2000000!
6630 RETURN
6640 IF CONTR=1 THEN GOSUB 6660 ELSE GOSUB 6710
6650 GOTO 6770
6660 CE=0:
6670 IF TAXPAYER=1 THEN C=5076.11 ELSE GOTO 6690
6680 RETURN
6690 IF TAXPAYER=2 THEN C=8447.8 ELSE C=2983.16
6700 RETURN
6710 CE=.12:
6720 IF TAXPAYER=1 THEN C=5212.57 ELSE GOTO 6740
6730 RETURN
6740 IF TAXPAYER=2 THEN C=8802.821 ELSE C=3191.59
6750 RETURN
6760 REM To determine if taxpayer is alive at age 70 1/2
6770 IF LLET>3 THEN GOTO 6790 ELSE GOTO 6980
6780 REM To determine which spouse lives the longest
6790 IF LLET<LES THEN GOTO 6810 ELSE GOTO 6850
6800 REM To determine the time period of 100% receipts and the time period
of 50% receipts
6810 LLE=LLET-YR: NPS=LES-LLET
6820 FBR=FB*(1+RP)^YR
6830 PVOA=7.10336
6840 GOTO 6930
6850 LLE=LLET-YR: NPS=0
6860 REM Lines 2944-2960--To determine the retirement fund balance at age 7
0 1/2 and to determine the amount of the annual annuity receipts
6870 RL=13: YR=6: RP=9.000001E-02:
6880 FBR=FB*(1+RP)^YR
6890 IF LES=2 THEN GOTO 6900 ELSE GOTO 6920
6900 PVOA=6.74987
6910 GOTO 6930
6920 PVOA=7.10336

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6930 A=FBR/PVOA
6940 FB=FBR
6950 REM To go to determine the income taxes (line 2744-2800)
6960 GOTO 6250
6970 REM To determine if both spouses die before the taxpayer reaches age 7
0 1/2
6980 IF LES=2 THEN GOTO 7000 ELSE RETURN
6990 REM Lines 2972-2980--To determine the retirement fund balance at the d
eath of both spouses
7000 YRD=2: RL=13: RP=9.000001E-02:
7010 FBD=FB*(1+RP)^YRD
7020 AS=FBD
7030 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
7040 GOSUB 12640
7050 RETURN
7060 REM Start of program for Opt=4
7070 REM Lines 2992-3052--Input data
7080 IF TAXPAYER=1 THEN GOSUB 7100 ELSE GOSUB 7120
7090 GOTO 7180
7100 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=42576.8: OTI=1000: OA=500
00!
7110 RETURN
7120 IF TAXPAYER=2 THEN GOSUB 7140 ELSE GOSUB 7160
7130 RETURN
7140 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.25: NAI=85152.68: OTI=12000!:
OA=150000!:
7150 RETURN
7160 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.5: NAI=170306.27#: OT
I=170000!: OA=2000000!:
7170 RETURN
7180 IF CONTR=1 THEN GOSUB 7200 ELSE GOSUB 7220
7190 GOTO 7250
7200 CE=0:
7210 RETURN
7220 CE=.12:
7230 RETURN
7240 REM To determine if taxpayer is alive at age 70 1/2
7250 IF LLET>3 THEN GOTO 7260 ELSE GOTO 7720
7260 YR=6
7270 REM To determine the time period after the IRA
7280 IF LLET<LES THEN LLE=LES-YR ELSE LLE=LLET-YR
7290 REM To determine the IRA balance at age 70 1/2
7300 IB=FB*(1-CE)*(1+RI)^YR
7310 REM To determine the amount of the non-IRA investments to age 70 1/2
7320 ASCE=FB*CE*(1+RS*(1-TRI))^YR
7330 REM Income taxes on the non-IRA investment earnings
7340 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
7350 REM Lines 3080-3112--To determine the regular averaging taxes
7360 CTI=OTI+IB
7370 AI=((CTI-NAI)*.25)+NAI
7380 TI=AI
7390 IF TI<=62450! THEN GOSUB 11680 ELSE GOSUB 12360
7400 TAXAI=ITIR
7410 TI=NAI
7420 IF TI<=62450! THEN GOSUB 11680 ELSE GOSUB 12360
7430 TAXNAI=ITIR
7440 ITIA=((TAXAI-TAXNAI)*3)+TAXAI
7450 REM Lines 3116-3124--To determine the income taxes on other taxable in
come
7460 TI=OTI
7470 IF TI<=62450! THEN GOSUB 11680 ELSE GOSUB 12360
7480 TOTI=ITIR
7490 REM Lines 3128-3132--To determine the regular income taxes
7500 TI=CTI
7510 IF TI<=62450! THEN GOSUB 11680 ELSE GOSUB 12360

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7520 REM To determine the lowest income taxes from either regular averaging
      or regular
7530 IF ITIR<ITIA THEN ITI=ITIR-TOTI ELSE ITI=ITIA-TOTI
7540 REM After tax investment
7550 IV=(IB-ITI)+ASCE
7560 REM Lines 3144-3148--Amount of the IRA if both spouses die before taxp
      ayer reaches age 70 1/2
7570 IF LLE=0 THEN AS=IB+ASCE ELSE GOTO 7610
7580 IT=ITCE
7590 GOTO 7690
7600 REM Lines 3156-3176--To determine the amount of earnings saved and acc
      umulated over the lives of the spouses
7610 FOR I=1 TO LLE
7620 ASI=ASI+(IV*RS*(1-TRI)*S)*(1+RS*(1-TRI))^(LLE-I)
7630 NEXT
7640 ASII=ASI+IV
7650 REM Total income taxes
7660 IT=ITI+ITCE+(IV*RS*TRI*LLE)+((ASII-IV-(IV*RS*(1-TRI)*S*LLE))/(1-TRI))*
      TRI
7670 AS=ASII
7680 REM To go to calculate the estate taxes and the amount bequeathed to t
      he beneficiaries
7690 GOSUB 12640
7700 RETURN
7710 REM To determine if both spouses die before the taxpayer reaches age 7
      0 1/2
7720 IF LES=2 THEN GOTO 7730 ELSE GOTO 7850
7730 YRD=2
7740 REM To determine the IRA balance at death of spouse before age 70 1/2
7750 IB=FB*(1-CE)*(1+RI)^YRD
7760 REM To determine the non-IRA investment at death of spouses before age
      70 1/2
7770 ASCE=FB*(CE)*(1+RS*(1-TRI))^YRD
7780 AS=IB+ASCE
7790 ITCE=((ASCE-FB*CE)/(1-TRI))*TRI
7800 REM Total income taxes
7810 IT=ITCE
7820 REM To go to calculate the estate taxes and the amount bequeathed to t
      he beneficiaries
7830 GOSUB 12640
7840 RETURN
7850 YRD=2
7860 REM To sort by age difference between the spouses
7870 IF ADBS=0 THEN GOTO 7890 ELSE GOTO 7960
7880 REM IRA balance at distribution date
7890 IB=FB*(1-CE)*(1+RI)^YRD
7900 LLE=LES-YRD
7910 REM The non-IRA investment balance at distribution date
7920 ASCED=FB*CE*(1+RS*(1-TRI))^YRD
7930 ASCE=ASCED
7940 GOTO 7340
7950 REM The time period to distribution date if there is an age difference
      between the spouses
7960 YRR=ADBS-YRD
7970 REM The time period after the IRA distribution if there is an age diff
      erence between the spouses
7980 LLE=LES-ADBS
7990 REM Lines 3260-3272--Amount of IRA and non-IRA investment at distribut
      ion date
8000 IBD=FB*(1-CE)*(1+RI)^YRD
8010 IB=IBD*(1+RI)^YRR
8020 ASCED=FB*CE*(1+RS*(1-TRI))^YRD
8030 ASCE=ASCED*(1+RS*(1-TRI))^YRR
8040 REM To go to calculate the income taxes (lines 3076-3220)
8050 GOTO 7340
8060 REM To start program for Opt=5

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8070 ASA=0:
8080 REM Lines 3284-3368--Input data
8090 IF TAXPAYER=1 THEN GOTO 8100 ELSE GOTO 8120
8100 FB=70000!: RI=.08: RS=.06: TRI=.15: OA=50000!
8110 GOTO 8170
8120 IF TAXPAYER=2 THEN GOTO 8130 ELSE GOTO 8150
8130 FB=140000!: RI=.08: RS=.08: TRI=.25: OA=150000!
8140 GOTO 8170
8150 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.5: OA=2000000!
8160 REM To determine if taxpayer is alive at age 70 1/2
8170 IF LLET>3 THEN GOTO 8180 ELSE GOTO 8670
8180 IF CONTR=1 THEN GOTO 8190 ELSE GOTO 8240
8190 CE=0: YR=6:
8200 IF TAXPAYER=1 THEN C=3937.06 ELSE GOTO 8220
8210 GOTO 8290
8220 IF TAXPAYER=2 THEN C=5848.44 ELSE C=1963.76
8230 GOTO 8290
8240 CE=.12: YR=6:
8250 IF TAXPAYER=1 THEN C=4092.96 ELSE GOTO 8270
8260 GOTO 8290
8270 IF TAXPAYER=2 THEN C=6309.01 ELSE C=2114.88
8280 REM To determine the longest life after IRA distribution
8290 IF LLET<LES THEN LLE=LES-YR ELSE LLE=LLET-YR
8300 REM Lines 3380-3384--To determine the amount of the IRA and the non-IR
A investment balance at age 70 1/2
8310 IB=FB*(1-CE)*(1+RI)^YR
8320 ASCE=FB*CE*(1+RS*(1-TRI))^YR
8330 RL=13
8340 REM To determine if spouse is alive when the taxpayer reaches age 70 1
/2
8350 IF LES=2 THEN GOSUB 9590 ELSE GOTO 8360
8360 GOTO 8400
8370 REM To go to determine the amount of annual annuity receipts
8380 IF RL=17 THEN GOSUB 9510 ELSE GOSUB 9550
8390 REM Lines 3396-3412--Inclusion ratio
8400 IF CONTR=1 THEN IRCE=1 ELSE GOTO 8420
8410 GOTO 8460
8420 IF ACE=0 THEN IRCE=0 ELSE GOTO 8440
8430 GOTO 8460
8440 IRCE=1-((ASCE)/(ACE*RL))
8450 REM Income taxes on annuity receipts
8460 ITA=(AIB+(ACE*IRCE))*TRI*LLE
8470 REM Income taxes on non-IRA investments
8480 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
8490 REM Lines 3424-3428--Amount of asset accumulation if the death of both
spouses occurs before the IRA is distributed
8500 IF LLE=0 THEN AS=IB+ASCE ELSE GOTO 8550
8510 IT=ITCE
8520 REM To go to calculate the amount of annual annuity receipts
8530 GOTO 8640
8540 REM Lines 3436-3448--To determine the amount saved and accumulated ove
r the lives of the spouses
8550 S=AIB*(1-TRI)+ACE*(1-(IRCE*TRI))-C
8560 FOR I=1 TO LLE
8570 ASA=ASA+S*(1+RS*(1-TRI))^(LLE-I)
8580 NEXT
8590 ITAS=((ASA-(S*LLE))/(1-TRI))*TRI
8600 REM Total income taxes
8610 IT=ITA+ITCE+ITAS
8620 AS=ASA
8630 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
8640 GOSUB 12640
8650 RETURN
8660 REM To determine if both spouses are alive when the taxpayer reaches a
ge 70 1/2

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8670 IF LES=2 THEN GOTO 8680 ELSE GOTO 8840
8680 YRD=2
8690 REM To determine if employee made contributions to the plan
8700 IF CONTR=1 THEN GOTO 8710 ELSE GOTO 8730
8710 CE=0
8720 GOTO 8750
8730 CE=.12
8740 REM Lines 3496-3504--To determine the IRA and non-IRA balances at death of spouses
8750 IB=FB*(1-CE)*(1+RI)^YRD
8760 ASCE=FB*(CE)*(1+RS*(1-TRI))^YRD
8770 AS=IB+ASCE
8780 ITCE=((ASCE-FB*CE)/(1-TRI))*TRI
8790 REM Total income taxes
8800 IT=ITCE
8810 REM To go to calculate the estate taxes and the amount bequeathed to the beneficiaries
8820 GOSUB 12640
8830 RETURN
8840 YRD=2:
8850 REM Lines 3528-3576--Input data if spouses are the same age
8860 IF ADBS=0 THEN GOTO 8870 ELSE GOTO 9100
8870 RL=16:
8880 LLE=LES-YRD
8890 IF CONTR=1 THEN GOTO 8900 ELSE GOTO 8950
8900 CE=0
8910 IF TAXPAYER=1 THEN C=3006.39 ELSE GOTO 8930
8920 GOTO 9000
8930 IF TAXPAYER=2 THEN C=4453.02 ELSE C=1443.42
8940 GOTO 9000
8950 CE=.12:
8960 IF TAXPAYER=1 THEN C=3169.79 ELSE GOTO 8980
8970 GOTO 9000
8980 IF TAXPAYER=2 THEN C=4817.48 ELSE C=1594.54
8990 REM Lines 3580-3584--IRA and non-IRA investment balances at IRA distribution date
9000 IB=FB*(1-CE)*(1+RI)^YRD
9010 ASCE=FB*CE*(1+RS*(1-TRI))^YRD
9020 IF LLE=0 THEN GOTO 9030 ELSE GOTO 9060
9030 AIB=0: ACE=0:
9040 GOTO 9080
9050 REM To go to determine the amount of annual annuity receipts from IRA
9060 GOSUB 9630
9070 REM To go to calculate the income taxes (lines 3396-3468)
9080 GOTO 8400
9090 REM Time period of IRA
9100 YRR=ADBS-YRD
9110 LLE=LES-ADBS
9120 RL=17
9130 IF ADBS=5 THEN GOTO 9150 ELSE GOTO 9380
9140 REM Lines 3624-3660--Input data if the age difference between the spouses is 5 years
9150 IF CONTR=1 THEN GOTO 9160 ELSE GOTO 9210
9160 CE=0:
9170 IF TAXPAYER=1 THEN C=3676.89 ELSE GOTO 9190
9180 GOTO 9260
9190 IF TAXPAYER=2 THEN C=5470.77 ELSE C=1818.29
9200 GOTO 9260
9210 CE=.12
9220 IF TAXPAYER=1 THEN C=3835.99 ELSE GOTO 9240
9230 GOTO 9260
9240 IF TAXPAYER=2 THEN C=5903.42 ELSE C=1970.22
9250 REM Lines 3664-3676--To determine the IRA and non-IRA investment balances at IRA distribution date
9260 IBD=FB*(1-CE)*(1+RI)^YRD
9270 IB=IBD*(1+RI)^YRR

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9280 ASCED=FB*CE*(1+RS*(1-TRI))^YRD
9290 ASCE=ASCED*(1+RS*(1-TRI))^YRR
9300 IF LLE=0 THEN GOTO 9310 ELSE GOTO 9340
9310 AIB=0: ACE=0:
9320 GOTO 9360
9330 REM To go to determine the amount of annual annuity receipts from the
IRA
9340 GOSUB 9670
9350 REM To go to calculate income taxes (lines 3696-3468)
9360 GOTO 8400
9370 REM Lines 3700-3728--Input data if the age difference between the spou
ses is 10 years
9380 IF CONTR=1 THEN GOTO 9390 ELSE GOTO 9440
9390 CE=0
9400 IF TAXPAYER=1 THEN C=5141.93 ELSE GOTO 9420
9410 GOTO 9260
9420 IF TAXPAYER=2 THEN C=7686.44 ELSE C=2671.67
9430 GOTO 9260
9440 CE=.12
9450 IF TAXPAYER=1 THEN C=5309.99 ELSE GOTO 9480
9460 REM To go to determine the IRA and non-IRA investment balances at IRA
distribution date
9470 GOTO 9260
9480 IF TAXPAYER=2 THEN C=8207.93 ELSE C=2812.3
9490 REM Lines 3740-3804--Calculation of annual annuity receipts
9500 GOTO 9260
9510 PVOA=8.543629
9520 AIB=IB/PVOA
9530 ACE=ASCE/PVOA
9540 RETURN
9550 PVOA=7.4869
9560 AIB=IB/PVOA
9570 ACE=ASCE/PVOA
9580 RETURN
9590 PVOA=6.74987
9600 AIB=IB/PVOA
9610 ACE=ASCE/PVOA
9620 RETURN
9630 PVOA=7.37916
9640 AIB=IB/PVOA
9650 ACE=ASCE/PVOA
9660 RETURN
9670 PVOA=7.54879
9680 AIB=IB/PVOA
9690 ACE=ASCE/PVOA
9700 RETURN
9710 REM To start program for Opt=6
9720 REM Lines 3808-3896--Input data if age is 65
9730 ASAI=0: ASAC=0: ASA=0:
9740 IF TAXPAYER=1 THEN GOTO 9750 ELSE GOTO 9770
9750 FB=70000!: RI=.08: RS=.06: TRI=.15: OA=50000!:
9760 GOTO 9820
9770 IF TAXPAYER=2 THEN GOTO 9780 ELSE GOTO 9800
9780 FB=140000!: RI=.08: RS=.08: TRI=.25: OA=150000!:
9790 GOTO 9820
9800 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.5: OA=2000000!:
9810 REM To determine if taxpayer is alive at 70 1/2
9820 IF LLET>3 THEN GOTO 9830 ELSE GOTO 10410
9830 IF CONTR=1 THEN GOTO 9840 ELSE GOTO 9890
9840 CE=0: YR=6:
9850 IF TAXPAYER=1 THEN C=3937.06 ELSE GOTO 9870
9860 GOTO 9940
9870 IF TAXPAYER=2 THEN C=5848.44 ELSE C=1963.76
9880 GOTO 9940
9890 CE=.12: YR=6:
9900 IF TAXPAYER=1 THEN C=4092.96 ELSE GOTO 9920

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9910 GOTO 9940
9920 IF TAXPAYER=2 THEN C=6309.01 ELSE C=2114.88
9930 REM To determine the spouse who lives the longest
9940 IF LLET<LES THEN GOSUB 9970 ELSE GOSUB 9990
9950 GOTO 10020
9960 REM Lines 3912-3920--Time period of the 100% receipts and time period
of the 50% receipts
9970 LLE=LLET-YR: NPS=LES-LLET
9980 RETURN
9990 LLE=LLET-YR: NPS=0
10000 RETURN
10010 REM Lines 3928-3932--To determine the IRA and non-IRA investment bala
nces at age 70 1/2
10020 IB=FB*(1-CE)*(1+RI)^YR
10030 ASCE=FB*CE*(1+RS*(1-TRI))^YR
10040 RL=13
10050 IF LES=2 THEN GOSUB 9590 ELSE GOTO 10080
10060 GOTO 10100
10070 REM To go to determine the amount of annual annuity receipts from IRA

10080 IF RL=17 THEN GOSUB 11510 ELSE GOSUB 11550
10090 REM Lines 3940-3960--Inclusion ratio
10100 IF CONTR=1 THEN IRCE=1 ELSE GOTO 10120
10110 GOTO 10160
10120 IF ACE=0 THEN IRCE=0 ELSE GOTO 10140
10130 GOTO 10160
10140 IRCE=1-((ASCE)/(ACE*RL))
10150 REM Income taxes on annuity
10160 ITA=((AIB+(ACE*IRCE))*TRI*LLE)+((.5*(AIB+(ACE*IRCE)))*TRI*NPS)
10170 REM Income taxes on non-IRA investment earnings
10180 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
10190 REM To determine if both spouses die before IRA is distributed and to
determine the accumulated assets at death of both spouses
10200 IF LLE=0 THEN AS=IB+ASCE ELSE GOTO 10240
10210 IT=ITCE
10220 GOTO 10380
10230 REM Lines 3984-4016--Amount saved and accumulated during the period a
fter the IRA distribution date
10240 S=AIB*(1-TRI)+ACE*(1-(IRCE*TRI))-C
10250 FOR I=1 TO LLE
10260 ASAI=ASAI+S*(1+RS*(1-TRI))^(LLE-I)
10270 NEXT
10280 ASAIB=ASAI*(1+RS*(1-TRI))^NPS
10290 FOR J=1 TO NPS
10300 ASAC=ASAC+S*.5*(1+RS*(1-TRI))^(NPS-J)
10310 NEXT
10320 ASA=ASAIB+ASAC
10330 ITAS=((ASA-(S*LLE)-(.5*S*NPS))/(1-TRI))*TRI
10340 AS=ASA
10350 REM Total income taxes
10360 IT=ITA+ITCE+ITAS
10370 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
10380 GOSUB 12640
10390 RETURN
10400 REM To determine if both spouses die before the taxpayer reaches age
70 1/2
10410 IF LES=2 THEN GOTO 10420 ELSE GOTO 10560
10420 YRD=2
10430 IF CONTR=1 THEN GOTO 10440 ELSE GOTO 10460
10440 CE=0:
10450 GOTO 10480
10460 CE=.12
10470 REM Lines 4064-4072 To determine the IRA and non-IRA investment balan
ces at death of both spouses
10480 IB=FB*(1-CE)*(1+RI)^YRD

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10490 ASCE=FB*(CE)*(1+RS*(1-TRI))^YRD
10500 AS=IB+ASCE
10510 REM Total income taxes
10520 IT=ITCE
10530 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
10540 GOSUB 12640
10550 RETURN
10560 YRD=2:
10570 REM Lines 4092-4140--Input data if the spouses are the same age
10580 IF ADBS=0 THEN GOTO 10590 ELSE GOTO 10820
10590 RL=16:
10600 LLE=LES-YRD
10610 IF CONTR=1 THEN GOTO 10620 ELSE GOTO 10670
10620 CE=0
10630 IF TAXPAYER=1 THEN C=3006.39 ELSE GOTO 10650
10640 GOTO 10720
10650 IF TAXPAYER=2 THEN C=4453.02 ELSE C=1443.42
10660 GOTO 10720
10670 CE=.12:
10680 IF TAXPAYER=1 THEN C=3169.79 ELSE GOTO 10700
10690 GOTO 10720
10700 IF TAXPAYER=2 THEN C=4817.48 ELSE C=1594.54
10710 REM Lines 4144-4148--To determine the IRA and non-IRA investment bala
nces at death of taxpayer
10720 IB=FB*(1-CE)*(1+RI)^YRD
10730 ASCE=FB*CE*(1+RS*(1-TRI))^YRD
10740 IF LLE=0 THEN GOTO 10750 ELSE GOTO 10780
10750 AIB=0: ACE=0:
10760 GOTO 10800
10770 REM To go to determine the amount of annual annuity receipts
10780 GOSUB 11590
10790 REM To go to determine the income taxes (lines 4308-4376)
10800 GOTO 11240
10810 REM To determine the time period of the IRA
10820 YRR=ADBS-YRD
10830 REM To determine the time period after the IRA distribution date
10840 LLE=LES-ADBS
10850 RL=17
10860 REM Lines 4184-4224--Input data if age difference between the spouses
is 5 years
10870 IF ADBS=5 THEN GOTO 10880 ELSE GOTO 11110
10880 IF CONTR=1 THEN GOTO 10890 ELSE GOTO 10940
10890 CE=0:
10900 IF TAXPAYER=1 THEN C=3676.89 ELSE GOTO 10920
10910 GOTO 10990
10920 IF TAXPAYER=2 THEN C=5470.77 ELSE C=1818.29
10930 GOTO 10990
10940 CE=.12
10950 IF TAXPAYER=1 THEN C=3835.99 ELSE GOTO 10970
10960 GOTO 10990
10970 IF TAXPAYER=2 THEN C=5903.42 ELSE C=1970.22
10980 REM Lines 4228-4244--To determine the IRA and non-IRA investment bala
nces at IRA distribution date
10990 IBD=FB*(1-CE)*(1+RI)^YRD
11000 IB=IBD*(1+RI)^YRR
11010 ASCED=FB*CE*(1+RS*(1-TRI))^YRD
11020 ASCE=ASCED*(1+RS*(1-TRI))^YRR
11030 IF LLE=0 THEN GOTO 11040 ELSE GOTO 11070
11040 AIB=0: ACE=0:
11050 GOTO 11090
11060 REM To go to determine the amount of annual annuity receipts
11070 GOSUB 11630
11080 REM To go to determine the income taxes (lines 4308-4376)
11090 GOTO 11240
11100 REM Lines 4264-4300--Input data if the age difference between the spo

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uses is 10 years
11110 IF CONTR=1 THEN GOTO 11120 ELSE GOTO 11170
11120 CE=0
11130 IF TAXPAYER=1 THEN C=5141.93 ELSE GOTO 11150
11140 GOTO 10990
11150 IF TAXPAYER=2 THEN C=7686.44 ELSE C=2671.67
11160 GOTO 10990
11170 CE=.12
11180 IF TAXPAYER=1 THEN C=5309.99 ELSE GOTO 11200
11190 GOTO 10990
11200 IF TAXPAYER=2 THEN C=8207.93 ELSE C=2812.3
11210 REM To go to determine the amount of annual annuity receipts
11220 GOTO 10990
11230 REM Lines 4308-4324--Inclusion ratio
11240 IF CONTR=1 THEN IRCE=1 ELSE GOTO 11260
11250 GOTO 11300
11260 IF ACE=0 THEN IRCE=0 ELSE GOTO 11280
11270 GOTO 11300
11280 IRCE=1-((ASCE)/(ACE*RL))
11290 REM Income taxes on annuity
11300 ITA=(AIB+(ACE*IRCE))*TRI*LLE
11310 REM Income taxes on non-IRA investment earnings
11320 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
11330 REM Total assets if both spouses die before the IRA is distributed
11340 IF LLE=0 THEN AS=IB+ASCE ELSE GOTO 11390
11350 REM Total income taxes
11360 IT=ITCE
11370 GOTO 11480
11380 REM Lines 4348-4360--Accumulated savings during the retirement period
of the spouses
11390 S=AIB*(1-TRI)+ACE*(1-(IRCE*TRI))-C
11400 FOR I=1 TO LLE
11410 ASA=ASA+S*(1+RS*(1-TRI))^(LLE-I)
11420 NEXT
11430 ITAS=((ASA-(S*LLE))/(1-TRI))*TRI
11440 REM Total income taxes
11450 IT=ITA+ITCE+ITAS
11460 AS=ASA
11470 REM To go to determine the estate taxes and the amount bequeathed to
the beneficiaries
11480 GOSUB 12640
11490 RETURN
11500 REM Lines 4384-4430--Calculation of annual annuity receipts
11510 PVOA=8.02155
11520 AIB=IB/PVOA
11530 ACE=ASCE/PVOA
11540 RETURN
11550 PVOA=7.10336
11560 AIB=IB/PVOA
11570 ACE=ASCE/PVOA
11580 RETURN
11590 PVOA=7.37916
11600 AIB=IB/PVOA
11610 ACE=ASCE/PVOA
11620 RETURN
11630 PVOA=7.54879
11640 AIB=IB/PVOA
11650 ACE=ASCE/PVOA
11660 RETURN
11670 REM Lines 4332-4804--Income tax rate schedules
11680 IF TI<=3540 THEN GOTO 11690 ELSE GOTO 11710
11690 ITIR=0
11700 GOTO 12010
11710 IF TI<=5720 THEN GOTO 11720 ELSE GOTO 11740
11720 ITIR=(TI-3540)*.11
11730 GOTO 12010

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11740 IF TI<=7910 THEN GOTO 11750 ELSE GOTO 11770
11750 ITIR=239.8+((TI-5720)*.12)
11760 GOTO 12010
11770 IF TI<=12390 THEN GOTO 11780 ELSE GOTO 11800
11780 ITIR=502.6+((TI-7910)*.14)
11790 GOTO 12010
11800 IF TI<=16650 THEN GOTO 11810 ELSE GOTO 11830
11810 ITIR=1129.8+((TI-12390)*.16)
11820 GOTO 12010
11830 IF TI<=21020 THEN GOTO 11840 ELSE GOTO 11860
11840 ITIR=1811.4+((TI-16650)*.18)
11850 GOTO 12010
11860 IF TI<=25600 THEN GOTO 11870 ELSE GOTO 11890
11870 ITIR=2598+((TI-21020)*.22)
11880 GOTO 12010
11890 IF TI<=31120 THEN GOTO 11900 ELSE GOTO 11920
11900 ITIR=3605.6+((TI-25600)*.25)
11910 GOTO 12010
11920 IF TI<=36630! THEN GOTO 11930 ELSE GOTO 11950
11930 ITIR=4985.6+((TI-31120)*.28)
11940 GOTO 12010
11950 IF TI<=47670! THEN GOTO 11960 ELSE GOTO 11980
11960 ITIR=6528.4+((TI-36630!)*.33)
11970 GOTO 12010
11980 IF TI<=62450! THEN GOTO 11990 ELSE GOTO 12000
11990 ITIR=10171.6+((TI-47670!)*.38)
12000 GOTO 12010
12010 RETURN
12020 IF TI<=2390 THEN GOTO 12030 ELSE GOTO 12050
12030 ITIR=0
12040 GOTO 12350
12050 IF TI<=3540 THEN GOTO 12060 ELSE GOTO 12080
12060 ITIR=(TI-2390)*.11
12070 GOTO 12350
12080 IF TI<=4580 THEN GOTO 12090 ELSE GOTO 12110
12090 ITIR=126.5+((TI-3540)*.12)
12100 GOTO 12350
12110 IF TI<=6760 THEN GOTO 12120 ELSE GOTO 12140
12120 ITIR=251.3+((TI-4580)*.14)
12130 GOTO 12350
12140 IF TI<=8850 THEN GOTO 12150 ELSE GOTO 12170
12150 ITIR=556.5+((TI-6760)*.15)
12160 GOTO 12350
12170 IF TI<=11240 THEN GOTO 12180 ELSE GOTO 12200
12180 ITIR=870+((TI-8850)*.16)
12190 GOTO 12350
12200 IF TI<=13430 THEN GOTO 12210 ELSE GOTO 12230
12210 ITIR=1252.4+((TI-11240)*.18)
12220 GOTO 12350
12230 IF TI<=15610 THEN GOTO 12240 ELSE GOTO 12260
12240 ITIR=1646.6+((TI-13430)*.2)
12250 GOTO 12350
12260 IF TI<=18940 THEN GOTO 12270 ELSE GOTO 12290
12270 ITIR=2082.6+((TI-15610)*.23)
12280 GOTO 12350
12290 IF TI<=24460 THEN GOTO 12300 ELSE GOTO 12320
12300 ITIR=2848.5+((TI-18940!)*.26)
12310 GOTO 12350
12320 IF TI<=29970 THEN GOTO 12330 ELSE GOTO 12340
12330 ITIR=4283.7+((TI-24460)*.3)
12340 GOTO 12350
12350 RETURN
12360 IF TI<=89090! THEN GOTO 12370 ELSE GOTO 12390
12370 ITIR=15788+((TI-62450!)*.42)
12380 GOTO 12470
12390 IF TI<=113869! THEN GOTO 12400 ELSE GOTO 12420

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12400 ITIR=26976.8+((TI-89090!)*.45)
12410 GOTO 12470
12420 IF TI<=169020! THEN GOTO 12430 ELSE GOTO 12450
12430 ITIR=38123.3+((TI-113860!)*.49)
12440 GOTO 12470
12450 ITIR=65151.7+((TI-169020!)*.5)
12460 GOTO 12470
12470 RETURN
12480 IF TI<=35490! THEN GOTO 12490 ELSE GOTO 12510
12490 ITIR=5936.7+((TI-29970)*.34)
12500 GOTO 12610
12510 IF TI<=43190! THEN GOTO 12520 ELSE GOTO 12540
12520 ITIR=7813.5+((TI-35490!)*.38)
12530 GOTO 12610
12540 IF TI<=57550! THEN GOTO 12550 ELSE GOTO 12570
12550 ITIR=10739.5+((TI-43190!)*.42)
12560 GOTO 12610
12570 IF TI<=85130! THEN GOTO 12580 ELSE GOTO 12600
12580 ITIR=16770.7+((TI-57550!)*.48)
12590 GOTO 12610
12600 ITIR=30009.1+((TI-85130!)*.5)
12610 RETURN
12620 REM To start estate tax calculations
12630 REM To determine the asset ownership
12640 IF SA=1 THEN TGOA=OA ELSE TGOA=.5*OA
12650 IF SA=1 THEN SGOA=0 ELSE SGOA=.5*OA
12660 REM To determine if subject to estate taxes
12670 IF TAXPAYER=3 THEN GOTO 12680 ELSE GOTO 13160
12680 UCE=600000!
12690 IF AGE=65 THEN GOTO 13080 ELSE GOTO 12710
12700 REM Lines 4828-4888--To determine the estate taxes if distribution is
    elected at age 70 1/2 and both spouses die before taxpayer reaches age 70
    1/2
12710 IF LLET=2 AND LES=2 THEN GOTO 12720 ELSE GOTO 12880
12720 TTE=TGOA+AS
12730 STE=TTE
12740 GOSUB 13200
12750 TXET=TET-192800!
12760 SPTE=SGOA
12770 IF SPTE=0 THEN GOTO 12820 ELSE GOTO 12780
12780 STE=SPTE
12790 GOSUB 13200
12800 SPET=TET-192800!
12810 GOTO 12830
12820 SPET=0
12830 ET=TXET+SPET
12840 TT=IT+ET
12850 TABTB=TTE+SPTE-ET
12860 RETURN
12870 REM Lines 4892-4932--To determine the estate taxes if distribution is
    elected at age 70 1/2 and the taxpayer is the last surviving spouse
12880 IF LLET=LES THEN GOTO 12890 ELSE GOTO 12900
12890 GOTO 12720
12900 IF LLET>LES GOTO 12910 ELSE GOTO 13000
12910 IF SGOA=0 THEN ABTT=0 ELSE ABTT=SGOA-UCE
12920 TTE=TGOA+ABTT+AS
12930 STE=TTE
12940 GOSUB 13200
12950 ET=TET-192800!
12960 TT=IT+ET
12970 IF SGOA=0 THEN TABTB=TTE-ET ELSE TABTB=UCE+(TTE-ET)
12980 RETURN
12990 REM Lines 4936-4960--To determine the estate taxes if distribution is
    elected at age 70 1/2 and the spouse survives the taxpayer
13000 SPTE=SGOA+(TGOA-UCE)+AS
13010 STE=SPTE

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13020 GOSUB 13200
13030 ET=TET-192800!
13040 TT=IT+ET
13050 TABTB=UCE+(SPTE-ET)
13060 RETURN
13070 REM Lines 4964-5004--To determine the estate taxes if distribution is
      elected at age 65
13080 IF LLET=2 AND LES=2 THEN GOTO 13090 ELSE GOTO 13140
13090 IF OPT=1 OR OPT=2 OR OPT=3 THEN GOTO 13100 ELSE GOTO 13120
13100 TTE=TGOA+AS
13110 GOTO 12730
13120 TTE=TGOA+IBD+ASCED
13130 GOTO 12730
13140 IF LLET=LES GOTO 12890 ELSE GOTO 13150
13150 IF LLET>LES THEN GOTO 12910 ELSE GOTO 13000
13160 TT=IT
13170 TABTB=TGOA+SGOA+AS
13180 RETURN
13190 REM Lines 5008-5120--Estate tax rate schedule
13200 IF STE<=750000! THEN GOTO 13210 ELSE GOTO 13230
13210 TET=155800!+(STE-500000!)*.37
13220 RETURN
13230 IF STE<=1000000! THEN GOTO 13240 ELSE GOTO 13260
13240 TET=248300!+(STE-750000!)*.39
13250 RETURN
13260 IF STE<=1250000! THEN GOTO 13270 ELSE GOTO 13290
13270 TET=345800!+(STE-1000000!)*.41
13280 RETURN
13290 IF STE<=1500000! THEN GOTO 13300 ELSE GOTO 13320
13300 TET=448300!+(STE-1250000!)*.43
13310 RETURN
13320 IF STE<=2000000! THEN GOTO 13330 ELSE GOTO 13350
13330 TET=555800!+(STE-1500000!)*.45
13340 RETURN
13350 IF STE<=2500000! THEN GOTO 13360 ELSE GOTO 13380
13360 TET=780800!+(STE-2000000!)*.49
13370 RETURN
13380 IF LLET=2 AND LES=2 THEN GOTO 13390 ELSE GOTO 13460
13390 IF STE<=3000000! THEN GOTO 13400 ELSE GOTO 13420
13400 TET=1025800!+(STE-2500000!)*.53
13410 RETURN
13420 IF STE<=1000000000000# THEN GOTO 13430 ELSE GOTO 13450
13430 TET=1290800!+(STE-3000000!)*.55
13440 RETURN
13450 RETURN
13460 IF STE<=1000000000000# THEN GOTO 13470 ELSE GOTO 13450
13470 TET=1025800!+(STE-2500000!)*.5
13480 RETURN

```

APPENDIX B

SPOUSE ELECTS DISTRIBUTION

1985

```
1000 REM To sort so that proper taxpayer information is printed on output
1010 IF TAXPAYER=1 THEN GOTO 1020 ELSE GOTO 1160
1020 LPRINT "Taxpayer's Life Expectancy";
1030 LPRINT LLET
1040 LPRINT "Spouse's Life Expectancy";
1050 LPRINT LES
1060 LPRINT "Employee's Contribution";
1070 LPRINT CONTR
1080 LPRINT "Age Differences Between Spouses";
1090 LPRINT ADBS
1100 LPRINT "Pre-1974 Plan Participation";
1110 LPRINT P74
1120 LPRINT "Other Assets Owned By Spouse";
1130 LPRINT SA
1140 LPRINT
1150 LPRINT
1160 REM To sort because options vary depending on the age difference betwe
en the spouses
1170 IF ADBS=0 THEN GOTO 1740 ELSE GOTO 1180
1180 FOR OPT=1 TO 4
1190 REM opt=1 => Annuity
1200 IF OPT=1 THEN GOSUB 2010 ELSE GOTO 1230
1210 GOTO 1280
1220 REM opt=2 => Lump sum distribution
1230 IF OPT=2 THEN GOSUB 3370 ELSE GOTO 1270
1240 GOTO 1280
1250 REM opt=3 => IRA--Annuity
1260 REM opt=4 => IRA--Lump sum distribution is invested
1270 IF OPT=3 THEN GOSUB 2520 ELSE GOSUB 4340
1280 LPRINT "Taxpayer";
1290 LPRINT TAXPAYER;
1300 LPRINT "Option";
1310 LPRINT OPT;
1320 LPRINT "Income Tax";
1330 LPRINT IT;
1340 LPRINT "Total Tax";
1350 LPRINT TT;
1360 LPRINT "Amount Bequeathed To Beneficiary";
1370 LPRINT TABTB
1380 LPRINT
1390 IF OPT=1 THEN TABTB1=TABTB ELSE GOTO 1410
1400 GOTO 1450
1410 IF OPT=2 THEN TABTB2=TABTB ELSE GOTO 1430
1420 GOTO 1450
1430 IF OPT=3 THEN TABTB3=TABTB ELSE TABTB4=TABTB
1440 GOTO 1450
1450 NEXT
1460 LPRINT
1470 REM Lines 428-506--To determine the optimal distribution option if the
re is an age difference between the spouses
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1480 IF TABTB1>TABTB2 THEN GOTO 1490 ELSE GOTO 1540
1490 IF TABTB1>TABTB3 THEN GOTO 1500 ELSE GOTO 1540
1500 IF TABTB1>TABTB4 THEN GOTO 1510 ELSE GOTO 1550
1510 LPRINT "Annuity";
1520 LPRINT TABTB1
1530 GOTO 1660
1540 IF TABTB2>TABTB3 THEN GOTO 1550 ELSE GOTO 1590
1550 IF TABTB2>TABTB4 THEN GOTO 1560 ELSE GOTO 1590
1560 LPRINT "Lump Sum Distribution";
1570 LPRINT TABTB2
1580 GOTO 1660
1590 IF TABTB3>TABTB4 THEN GOTO 1600 ELSE GOTO 1630
1600 LPRINT "IRA-Annuity";
1610 LPRINT TABTB3
1620 GOTO 1660
1630 LPRINT "IRA-Invested";
1640 LPRINT TABTB4
1650 GOTO 1660
1660 LPRINT
1670 LPRINT
1680 LPRINT
1690 RETURN
1700 END
1710 REM Options available if the spouses are the same age
1720 REM Opt=1 => Annuity
1730 REM opt=2 => Lump sum distribution
1740 FOR OPT=1 TO 2
1750 IF OPT=1 THEN GOSUB 2010 ELSE GOSUB 3370
1760 GOTO 1770
1770 LPRINT "Taxpayer";
1780 LPRINT TAXPAYER;
1790 LPRINT "Option";
1800 LPRINT OPT;
1810 LPRINT "Income Tax";
1820 LPRINT IT;
1830 LPRINT "Total Tax";
1840 LPRINT TT;
1850 LPRINT "Amount Bequeathed To Beneficiary";
1860 LPRINT TABTB
1870 LPRINT
1880 IF OPT=1 THEN TABTB1=TABTB ELSE TABTB3=TABTB
1890 GOTO 1900
1900 NEXT
1910 LPRINT
1920 REM Lines 584-600--To determine the optimal distribution if the spouse
s are the same age
1930 IF TABTB1>TABTB3 THEN GOTO 1940 ELSE GOTO 1970
1940 LPRINT "Annuity";
1950 LPRINT TABTB1
1960 GOTO 1660
1970 LPRINT "Lump Sum Distribution";
1980 LPRINT TABTB3
1990 GOTO 1660
2000 REM Start of program for Opt=1
2010 ASA=0: ASAS=0
2020 REM Lines 624-675--Input data
2030 IF TAXPAYER=1 THEN GOTO 2040 ELSE GOTO 2060
2040 FB=70000!: RI=.08: RS=.06: TRI=.15: RP=9.000001E-02: OA=50000!
2050 GOTO 2100
2060 IF TAXPAYER=2 THEN GOTO 2070 ELSE GOTO 2090
2070 FB=140000!: RI=.08: RS=.08: TRI=.25: RP=9.000001E-02: OA=150000!
2080 GOTO 2100
2090 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.5: RP=9.000001E-02: OA=20000
00!:
2100 IF CONTR=1 THEN GOTO 2110 ELSE GOTO 2160
2110 CE=0:

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2120 IF TAXPAYER=1 THEN C=3646.31 ELSE GOTO 2140
2130 GOTO 2210
2140 IF TAXPAYER=2 THEN C=6193.45 ELSE C=2250.41
2150 GOTO 2210
2160 CE=.12:
2170 REM Lines 765-777--Inclusion ratio
2180 IF TAXPAYER=1 THEN C=3727.75 ELSE GOTO 2200
2190 GOTO 2210
2200 IF TAXPAYER=2 THEN C=6401.16 ELSE C=2370.38
2210 YRD=2:
2220 REM To determine spouses life expectancy at taxpayer's death
2230 IF LLET<LES THEN LLE=LES-YRD ELSE LLE=LLET-YRD
2240 REM To determine the fund balance at taxpayer's death
2250 FBD=FB*(1+RP)^YRD
2260 REM Lines 684-702--To determine the amount of annual annuity receipts
2270 IF ADBS=0 THEN GOTO 2280 ELSE GOTO 2300
2280 RL=16: PVOA=7.37916
2290 GOTO 2340
2300 IF ADBS=5 THEN GOTO 2310 ELSE GOTO 2330
2310 RL=19: PVOA=7.83929
2320 GOTO 2340
2330 RL=22: PVOA=8.17574
2340 A=FBD/PVOA
2350 REM Inclusion ratio
2360 IR=1-((CE*FBD)/(A*RL))
2370 REM Income taxes on annuity receipts
2380 ITA=(A*IR*TRI*LLE)
2390 REM Lines 711-720--To determine the savings and accumulated savings over spouses lives
2400 S=(A*(1-(IR*TRI)))-C
2410 FOR I=1 TO LLE
2420 ASA=ASA+(S*(1+RS*(1-TRI))^(LLE-I))
2430 NEXT
2440 ITAS=((ASA-(S*LLE))/(1-TRI))*TRI
2450 REM Income taxes on accumulated earnings
2460 IT=ITA+ITAS
2470 AS=ASA
2480 REM To go to calculate the estate taxes and the amount bequeathed to the beneficiaries
2490 GOSUB 5470
2500 RETURN
2510 REM Start of program for opt=3
2520 ASA=0:
2530 REM Lines 741-759--Input data
2540 IF TAXPAYER=1 THEN GOTO 2550 ELSE GOTO 2570
2550 FB=70000!: RI=.08: RS=.06: TRI=.15: RP=9.000001E-02: OA=50000!:
2560 GOTO 2880
2570 IF TAXPAYER=2 THEN GOTO 2580 ELSE GOTO 2600
2580 FB=140000!: RI=.08: RS=.08: TRI=.25: RP=9.000001E-02: OA=150000!:
2590 GOTO 2880
2600 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.5: RP=9.000001E-02: OA=200000!:
2610 GOTO 2880
2620 REM Lines 765-777 Inclusion ratio
2630 IF CONTR=1 THEN IRCE=1 ELSE GOTO 2650
2640 GOTO 2690
2650 IF ACE=0 THEN IRCE=0 ELSE GOTO 2670
2660 GOTO 2690
2670 IRCE=1-((ASCE)/(ACE*RL))
2680 REM Income taxes on annuity
2690 ITA=(AIB+(ACE*IRCE))*TRI*LLE
2700 ITCE=((ASCE-(FBD*CE))/(1-TRI))*TRI
2710 IF LLE=0 THEN AS=IB+ASCE ELSE GOTO 2760
2720 REM Total income taxes
2730 IT=ITCE
2740 GOTO 2850

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2750 REM Lines 795-804--To determine the amount of annuity receipts saved a
nd accumulated savings
2760 S=AIB*(1-TRI)+ACE*(1-(IRCE*TRI))-C
2770 FOR I=1 TO LLE
2780 ASA=ASA+S*(1+RS*(1-TRI))^(LLE-I)
2790 NEXT
2800 ITAS=((ASA-(S*LLE))/(1-TRI))*TRI
2810 REM Total income taxes
2820 IT=ITA+ITCE+ITAS
2830 AS=ASA
2840 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
2850 GOSUB 5470
2860 RETURN
2870 REM To determine the time period until taxpayer's death
2880 YRD=2
2890 REM To determine the time period that the fund is held in the IRA
2900 YRR=ADBS-YRD
2910 REM To determine the time period the spouse survives after the IRA dis
tribution date
2920 LLE=LES-ADBS
2930 RL=17
2940 REM To sort based on the age difference between the spouses
2950 IF ADBS=5 THEN GOTO 2970 ELSE GOTO 3190
2960 REM Lines 837-864--Input data
2970 IF CONTR=1 THEN GOTO 2980 ELSE GOTO 3030
2980 CE=0:
2990 IF TAXPAYER=1 THEN C=3508.11 ELSE GOTO 3010
3000 GOTO 3080
3010 IF TAXPAYER=2 THEN C=5112.87 ELSE C=1852.12
3020 GOTO 3080
3030 CE=.12
3040 IF TAXPAYER=1 THEN C=3727.13 ELSE GOTO 3060
3050 GOTO 3080
3060 IF TAXPAYER=2 THEN C=5616.91 ELSE C=2032.55
3070 REM To determine the balance of retirement fund at the death of the ta
xpayer
3080 FBD=FB*(1+RP)^YRD
3090 REM Lines 870-873--To determine the amount of the IRA and the non-IRA
investment balance at distribution date
3100 IB=FBD*(1-CE)*(1+RI)^YRR
3110 ASCE=FBD*CE*(1+RS*(1-TRI))^YRR
3120 IF LLE=0 THEN GOTO 3130 ELSE GOTO 3160
3130 AIB=0: ACE=0:
3140 GOTO 3170
3150 REM To go to determine the amount of annual annuity receipts
3160 GOSUB 3310
3170 GOTO 2630
3180 REM Lines 891-921--Input data if the age difference between the spouse
s is 10 years
3190 IF CONTR=1 THEN GOTO 3200 ELSE GOTO 3250
3200 CE=0
3210 IF TAXPAYER=1 THEN C=4871.56 ELSE GOTO 3230
3220 GOTO 3080
3230 IF TAXPAYER=2 THEN C=7325.52 ELSE C=2721.38
3240 GOTO 3080
3250 CE=.12
3260 IF TAXPAYER=1 THEN C=5139.42 ELSE GOTO 3280
3270 GOTO 3080
3280 IF TAXPAYER=2 THEN C=7925.86 ELSE C=2896.62
3290 GOTO 3080
3300 REM Lines 924-930--To determine the amount of annual annuity receipts
3310 PVOA=7.54879
3320 AIB=IB/PVOA
3330 ACE=ASCE/PVOA
3340 RETURN

```

```

3350 REM Start of program for Opt=2
3360 REM Lines 936-984--Input data
3370 IF TAXPAYER=1 THEN GOSUB 3390 ELSE GOSUB 3410
3380 GOTO 3470
3390 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=35000!: OTI=1000: RP=9.00
0001E-02: OA=50000!:
3400 RETURN
3410 IF TAXPAYER=2 THEN GOSUB 3430 ELSE GOSUB 3450
3420 RETURN
3430 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.25: NAI=70000!: OTI=12000!: RP
=9.000001E-02: OA=150000!:
3440 RETURN
3450 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.5: NAI=140000!: OTI=1
70000!:RP=9.000001E-02: OA=2000000!:
3460 RETURN
3470 IF CONTR=1 THEN GOSUB 3490 ELSE GOSUB 3510
3480 GOTO 3530
3490 CE=0: YRD=2:
3500 RETURN
3510 CE=.12: YRD=2:
3520 RETURN
3530 ASAT=0: ASAS=0: SILS=0
3540 REM To determine the fund balance at the death of the taxpayer
3550 FBD=FB*(1+RP)^YRD
3560 REM To determine the remaining life expectancy of the spouse at the de
ath of the taxpayer
3570 LLE=LES-YRD
3580 REM Lines 993-1017--To determine the regular income averaging taxes
3590 CTI=OTI+(FBD*(1-CE)*(1-P74))+(FBD*(1-CE)*P74*.4)
3600 AI=((CTI-NAI)*.25)+NAI
3610 TI=AI
3620 IF TI<=29970! THEN GOSUB 4970 ELSE GOSUB 5310
3630 TAXAI=ITIR
3640 TI=NAI
3650 IF TI<=29970! THEN GOSUB 4970 ELSE GOSUB 5310
3660 TAXNAI=ITIR
3670 ITIA=((TAXAI-TAXNAI)*3)+TAXAI
3680 REM Lines 1020-1026--To determine the income taxes on only the other t
axable income
3690 TI=OTI
3700 IF TI<=29970! THEN GOSUB 4970 ELSE GOSUB 5310
3710 TOTI=ITIR
3720 REM Lines 1029-1068--To determine the 10-year averaging taxes if no ca
pital gain treatment is elected
3730 TLSD=(FBD*(1-CE))+2390
3740 IF TLSD>70000! THEN GOTO 3750 ELSE GOTO 3800
3750 TI=((FBD*(1-CE)*.1)+2390)
3760 IF TI<29970 THEN GOSUB 4970 ELSE GOSUB 5310
3770 T10A=(ITIR*10)+TOTI
3780 IF P74=0 THEN GOTO 4110 ELSE GOTO 3790
3790 GOTO 3900
3800 IF TLSD<=20000 THEN GOTO 3830 ELSE GOTO 3810
3810 MDA=(10000-((TLSD-20000)*.2))
3820 GOTO 3840
3830 MDA=10000
3840 TI=((TLSD-MDA)*.1)+2390
3850 IF TI<29970 THEN GOSUB 4970 ELSE GOSUB 5310
3860 T10A=(ITIR*10)+TOTI
3870 REM To determine if taxpayer qualifies for the capital gain treatment
3880 IF P74=0 THEN GOTO 4110 ELSE GOTO 3900
3890 REM Lines 1074-1080--To determine the income taxes on the capital gai
n
3900 TI=(FBD*(1-CE)*P74*.4)+OTI
3910 IF TI<29970 THEN GOSUB 4970 ELSE GOSUB 5310
3920 TCGD=ITIR
3930 REM Lines 1083-1122--To determine the 10-year averaging taxes if capit

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al gain treatment is elected
3940 TFB=FBD*(1-CE)*(1-P74)
3950 IF TFB>=70000! THEN GOTO 3960 ELSE GOTO 4000
3960 TI=(TFB*.1)+2390
3970 IF TI<29970 THEN GOSUB 4970 ELSE GOSUB 5310
3980 TOID=ITIR*10
3990 GOTO 4070
4000 IF TFB<=20000 THEN GOTO 4030 ELSE GOTO 4010
4010 MDA=(10000-((TFB-20000)*.2))
4020 GOTO 4040
4030 MDA=10000
4040 TI=((((FBD*(1-CE)*(1-P74))-MDA)*.1)+2390)
4050 IF TI<29970 THEN GOSUB 4970 ELSE GOSUB 5310
4060 TOID=ITIR*10
4070 T1OACG=TCGD+TOID
4080 REM To determine which is lower--with or without capital gain treatmen
t
4090 IF T1OA<T1OACG THEN IT1OG=T1OA ELSE IT1OG=T1OACG
4100 REM Lines 1134-1137--To determine regular income taxes
4110 TI=CTI
4120 IF TI<=29970! THEN GOSUB 4970 ELSE GOSUB 5310
4130 REM Lines 1140-1149--To determine the lowest income taxes from regular
, regular averaging and 10-year averaging
4140 IF ITIA<ITIR THEN GOTO 4150 ELSE GOTO 4170
4150 IF ITIA<IT1OG THEN ITLS=ITIA-TOTI ELSE GOTO 4170
4160 GOTO 4190
4170 IF ITIR<IT1OG THEN ITLS=ITIR-TOTI ELSE ITLS=IT1OG-TOTI
4180 REM After tax investment
4190 IV=FBD-ITLS
4200 REM Lines 1155-1173--To determine the amount of accumulated savings ov
er the spouse's life
4210 IF LLE=0 THEN SILS=0 ELSE GOTO 4230
4220 GOTO 4260
4230 FOR I=1 TO LLE
4240 SILS=SILS+(IV*RS*(1-TRI)*S*(1+RS*(1-TRI))^(LLE-I))
4250 NEXT
4260 ASILS=IV+SILS
4270 AS=ASILS
4280 REM Total income taxes
4290 IT=ITLS+(IV*RS*TRI*LLE)+((ASILS-IV-(IV*RS*(1-TRI)*S*LLE))/(1-TRI))*TRI

4300 REM To go to calculate the estate taxes and the amount to be bequeathe
d to beneficiaries
4310 GOSUB 5470
4320 RETURN
4330 REM Start of program for Opt=4
4340 REM Lines 1186-1230--Input data
4350 IF TAXPAYER=1 THEN GOSUB 4370 ELSE GOSUB 4390
4360 GOTO 4450
4370 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=35000!: OTI=1000: RP=9.00
0001E-02: OA=50000!:
4380 RETURN
4390 IF TAXPAYER=2 THEN GOSUB 4410 ELSE GOSUB 4430
4400 RETURN
4410 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.25: NAI=70000!: OTI=12000!: RP
=9.000001E-02: OA=150000!:
4420 RETURN
4430 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.5: NAI=140000!: OTI=1
70000!:RP=9.000001E-02: OA=2000000!:
4440 RETURN
4450 IF CONTR=1 THEN GOSUB 4470 ELSE GOSUB 4490
4460 GOTO 4520
4470 CE=0: YRD=2:
4480 RETURN
4490 CE=.12: YRD=2:
4500 RETURN

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4510 REM To determine the time period the fund remains in the IRA
4520 YRR=ADBS-YRD
4530 REM To determine the time period after the IRA's distribution date
4540 LLE=LES-ADBS:
4550 REM Lines 1239-1245--To determine the amount of the IRA balance and th
e amount of non-IRA investments at distribution date
4560 FBD=FB*(1+RP)^YRD
4570 IB=FBD*(1-CE)*(1+RI)^YRR
4580 ASCE=FBD*CE*(1+RS*(1-TRI))^YRR
4590 REM Income taxes on the non-IRA investment earnings
4600 ITCE=((ASCE-(FBD*CE))/(1-TRI))*TRI
4610 REM Lines 1251-1275--To determine the income taxes using regular avera
ging
4620 CTI=OTI+IB
4630 AI=((CTI-NAI)*.25)+NAI
4640 TI=AI
4650 IF TI<=29970! THEN GOSUB 4970 ELSE GOSUB 5310
4660 TAXAI=ITIR
4670 TI=NAI
4680 IF TI<=29970! THEN GOSUB 4970 ELSE GOSUB 5310
4690 TAXNAI=ITIR
4700 ITIA=((TAXAI-TAXNAI)*3)+TAXAI
4710 REM Lines 1278-1284--To determine the income taxes on other taxable in
come
4720 TI=OTI
4730 IF TI<=29970! THEN GOSUB 4970 ELSE GOSUB 5310
4740 TOTI=ITIR
4750 REM Lines 1287-1290--To determine the regular income taxes
4760 TI=CTI
4770 IF TI<=29970! THEN GOSUB 4970 ELSE GOSUB 5310
4780 REM To determine the lowest income taxes from either regular averaging
or regular
4790 IF ITIR<ITIA THEN ITI=ITIR-TOTI ELSE ITI=ITIA-TOTI
4800 REM After tax investment
4810 IV=(IB-ITI)+ASCE
4820 REM Lines 1299-1317--To determine the amount of earnings saved and acc
umulated over the spouse's life
4830 IF LLE=0 THEN AS=IB+ASCE ELSE GOTO 4860
4840 IT=ITCE
4850 GOTO 4940
4860 FOR I=1 TO LLE
4870 ASI=ASI+(IV*RS*(1-TRI)*S)*(1+RS*(1-TRI))^(LLE-I)
4880 NEXT
4890 ASII=ASI+IV
4900 REM Total income taxes
4910 IT=ITI+ITCE+(IV*RS*TRI*LLE)+((ASII-IV-(IV*RS*(1-TRI)*S*LLE))/(1-TRI))*
TRI
4920 AS=ASII
4930 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
4940 GOSUB 5470
4950 RETURN
4960 REM Lines 1470-1611--1985 income tax rate schedule
4970 IF TI<=2390 THEN GOTO 4980 ELSE GOTO 5000
4980 ITIR=0
4990 GOTO 5300
5000 IF TI<=3540 THEN GOTO 5010 ELSE GOTO 5030
5010 ITIR=(TI-2390)*.11
5020 GOTO 5300
5030 IF TI<=4580 THEN GOTO 5040 ELSE GOTO 5060
5040 ITIR=126.5+((TI-3540)*.12)
5050 GOTO 5300
5060 IF TI<=6760 THEN GOTO 5070 ELSE GOTO 5090
5070 ITIR=251.3+((TI-4580)*.14)
5080 GOTO 5300
5090 IF TI<=8850 THEN GOTO 5100 ELSE GOTO 5120

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5100 ITIR=556.5+((TI-6760)*.15)
5110 GOTO 5300
5120 IF TI<=11240 THEN GOTO 5130 ELSE GOTO 5150
5130 ITIR=870+((TI-8850)*.16)
5140 GOTO 5300
5150 IF TI<=13430 THEN GOTO 5160 ELSE GOTO 5180
5160 ITIR=1252.4+((TI-11240)*.18)
5170 GOTO 5300
5180 IF TI<=15610 THEN GOTO 5190 ELSE GOTO 5210
5190 ITIR=1646.6+((TI-13430)*.2)
5200 GOTO 5300
5210 IF TI<=18940 THEN GOTO 5220 ELSE GOTO 5240
5220 ITIR=2082.6+((TI-15610)*.23)
5230 GOTO 5300
5240 IF TI<=24460 THEN GOTO 5250 ELSE GOTO 5270
5250 ITIR=2848.5+((TI-18940)*.26)
5260 GOTO 5300
5270 IF TI<=29970 THEN GOTO 5280 ELSE GOTO 5290
5280 ITIR=4283.7+((TI-24460)*.3)
5290 GOTO 5300
5300 RETURN
5310 IF TI<=35490! THEN GOTO 5320 ELSE GOTO 5340
5320 ITIR=5936.7+((TI-29970)*.34)
5330 GOTO 5440
5340 IF TI<=43190! THEN GOTO 5350 ELSE GOTO 5370
5350 ITIR=7813.5+((TI-35490!)*.38)
5360 GOTO 5440
5370 IF TI<=57550! THEN GOTO 5380 ELSE GOTO 5400
5380 ITIR=10739.5+((TI-43190!)*.42)
5390 GOTO 5440
5400 IF TI<=85130! THEN GOTO 5410 ELSE GOTO 5430
5410 ITIR=16770.7+((TI-57550!)*.48)
5420 GOTO 5440
5430 ITIR=30009.1+((TI-85130!)*.5)
5440 RETURN
5450 REM To start estate tax calculations
5460 REM To determine if taxpayer is subject to estate taxes
5470 IF TAXPAYER=3 GOTO 5480 ELSE GOTO 5640
5480 OA=2000000!: UCE=600000!:
5490 REM Lines 1620 and 1629--To determine the asset ownership
5500 IF SA=1 THEN TGOA=OA ELSE TGOA=.5*OA
5510 REM Lines 1623-1638--To determine the total estate taxes
5520 TGE=TGOA+FBD
5530 ABTS=TGE-UCE
5540 IF SA=1 THEN SGOA=0 ELSE SGOA=.5*OA
5550 STE=(ABTS-FBD)+SGOA+AS
5560 GOSUB 5720
5570 ET=TET-192800!
5580 REM Total income and estate taxes for the high taxpayer
5590 TT=IT+ET
5600 REM Total amount bequeathed to beneficiaries
5610 TABTB=UCE+(STE-ET)
5620 RETURN
5630 REM Total taxes for the low taxpayer and the middle taxpayer
5640 TT=IT
5650 REM Lines 1653-1656--To determine the asset ownership
5660 IF SA=1 THEN TGOA=OA ELSE TGOA=.5*OA
5670 IF SA=1 THEN SGOA=0 ELSE SGOA=.5*OA
5680 REM Total amount bequeathed to beneficiaries
5690 TABTB=TGOA+SGOA+AS
5700 RETURN
5710 REM Lines 1665-1749--Estate tax rate schedule
5720 IF STE<=750000! THEN GOTO 5730 ELSE GOTO 5750
5730 TET=155800!+(STE-500000!)*.37
5740 RETURN
5750 IF STE<=1000000! THEN GOTO 5760 ELSE GOTO 5780

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5760 TET=248300!+(STE-750000!)*.39
5770 RETURN
5780 IF STE<=1250000! THEN GOTO 5790 ELSE GOTO 5810
5790 TET=345800!+(STE-1000000!)*.41
5800 RETURN
5810 IF STE<=1500000! THEN GOTO 5820 ELSE GOTO 5840
5820 TET=448300!+(STE-1250000!)*.43
5830 RETURN
5840 IF STE<=2000000! THEN GOTO 5850 ELSE GOTO 5870
5850 TET=555800!+(STE-1500000!)*.45
5860 RETURN
5870 IF STE<=2500000! THEN GOTO 5880 ELSE GOTO 5900
5880 TET=780800!+(STE-2000000!)*.49
5890 RETURN
5900 IF LLET=2 AND LES=2 THEN GOTO 5910 ELSE GOTO 5980
5910 IF STE<=3000000! THEN GOTO 5920 ELSE GOTO 5940
5920 TET=1025800!+(STE-2500000!)*.53
5930 RETURN
5940 IF STE<=1000000000000# THEN GOTO 5950 ELSE GOTO 5970
5950 TET=1290800!+(STE-3000000!)*.55
5960 RETURN
5970 RETURN
5980 IF STE<=1000000000000# THEN GOTO 5990 ELSE GOTO 5970
5990 TET=1025800!+(STE-2500000!)*.5
6000 RETURN
```

APPENDIX C

TAXPAYER ELECTS DISTRIBUTION

TAX REFORM ACT OF 1986

```
1000 REM To sort so that proper taxpayer information is printed on output
1010 IF LLET<LES THEN GOTO 1020 ELSE GOTO 1200
1020 IF TAXPAYER=1 THEN GOTO 1030 ELSE GOTO 1360
1030 LPRINT "Taxpayer's Life Expectancy";
1040 LPRINT LLET
1050 LPRINT "Spouse's Life Expectancy";
1060 LPRINT LES
1070 LPRINT "Employee's Contribution";
1080 LPRINT CONTR
1090 LPRINT "Age Differences Between Spouses";
1100 LPRINT ADBS
1110 LPRINT "Pre-1974 Plan Participation";
1120 LPRINT P74
1130 LPRINT "Other Assets Owned By Spouse";
1140 LPRINT SA
1150 LPRINT "Age Taxpayer Selects For Distribution";
1160 LPRINT AGE
1170 LPRINT
1180 LPRINT
1190 GOTO 1360
1200 IF TAXPAYER=1 THEN GOTO 1210 ELSE GOTO 1360
1210 LPRINT "Taxpayer's Life Expectancy";
1220 LPRINT LLET
1230 LPRINT "Spouse's Life Expectancy";
1240 LPRINT LES
1250 LPRINT "Employee's Contribution";
1260 LPRINT CONTR
1270 LPRINT "Pre-1974 Plan Participation";
1280 LPRINT P74
1290 LPRINT "Other Assets Owned By Spouse";
1300 LPRINT SA
1310 LPRINT "Age Taxpayer Selects For Distribution";
1320 LPRINT AGE
1330 LPRINT
1340 LPRINT
1350 REM To sort because options vary depending on the distribution age
1360 IF AGE=65 THEN GOTO 1370 ELSE GOTO 2110
1370 FOR OPT=1 TO 6
1380 REM Opt=1 => Lump sum distribution
1390 IF OPT=1 THEN GOSUB 2520 ELSE GOTO 1420
1400 GOTO 1540
1410 REM Opt=2 => Annuity with 100% payment to spouse
1420 IF OPT=2 THEN GOSUB 4870 ELSE GOTO 1450
1430 GOTO 1540
1440 REM Opt=3 => Annuity with 50% payment to spouse
1450 IF OPT=3 THEN GOSUB 6500 ELSE GOTO 1480
1460 GOTO 1540
1470 REM Opt=4 => IRA--lump sum distribution is invested
1480 IF OPT=4 THEN GOSUB 9310 ELSE GOTO 1520
1490 GOTO 1540
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1500 REM Opt=5 => IRA--annuity with 100% payment to spouse
1510 REM Opt=6 => IRA--annuity with 50% payment to spouse
1520 IF OPT=5 THEN GOSUB 10250 ELSE GOSUB 12510
1530 GOTO 1540
1540 LPRINT "Taxpayer";
1550 LPRINT TAXPAYER;
1560 LPRINT "Option";
1570 LPRINT OPT;
1580 LPRINT "Income Tax";
1590 LPRINT IT;
1600 LPRINT "Total Tax";
1610 LPRINT TT;
1620 LPRINT "Amount Bequeathed To Beneficiary";
1630 LPRINT TABTB
1640 LPRINT
1650 IF OPT=1 THEN TABTB1=TABTB ELSE GOTO 1670
1660 GOTO 1740
1670 IF OPT=2 THEN TABTB2=TABTB ELSE GOTO 1690
1680 GOTO 1740
1690 IF OPT=3 THEN TABTB3=TABTB ELSE GOTO 1710
1700 GOTO 1740
1710 IF OPT=4 THEN TABTB4=TABTB ELSE GOTO 1730
1720 GOTO 1740
1730 IF OPT=5 THEN TABTB5=TABTB ELSE TABTB6=TABTB
1740 NEXT
1750 LPRINT
1760 REM Lines 1272-1396--To determine the optimal distribution option if d
istribution is at age 65
1770 IF TABTB1>TABTB2 THEN GOTO 1780 ELSE GOTO 1850
1780 IF TABTB1>TABTB3 THEN GOTO 1790 ELSE GOTO 1850
1790 IF TABTB1>TABTB4 THEN GOTO 1800 ELSE GOTO 1860
1800 IF TABTB1>TABTB5 THEN GOTO 1810 ELSE GOTO 1870
1810 IF TABTB1>TABTB6 THEN GOTO 1820 ELSE GOTO 1880
1820 LPRINT "Lump Sum Distribution";
1830 LPRINT TABTB1
1840 GOTO 2460
1850 IF TABTB2>TABTB3 THEN GOTO 1860 ELSE GOTO 1920
1860 IF TABTB2>TABTB4 THEN GOTO 1870 ELSE GOTO 1920
1870 IF TABTB2>TABTB5 THEN GOTO 1880 ELSE GOTO 1930
1880 IF TABTB2>TABTB6 THEN GOTO 1890 ELSE GOTO 1940
1890 LPRINT "Annuity With 100% Payment To Spouse";
1900 LPRINT TABTB2
1910 GOTO 2460
1920 IF TABTB3>TABTB4 THEN GOTO 1930 ELSE GOTO 1980
1930 IF TABTB3>TABTB5 THEN GOTO 1940 ELSE GOTO 1980
1940 IF TABTB3>TABTB6 THEN GOTO 1950 ELSE GOTO 1990
1950 LPRINT "Annuity With 50% Payment To Spouse";
1960 LPRINT TABTB3
1970 GOTO 2460
1980 IF TABTB4>TABTB5 THEN GOTO 1990 ELSE GOTO 2030
1990 IF TABTB4>TABTB6 THEN GOTO 2000 ELSE GOTO 2030
2000 LPRINT "After Tax IRA Distribution Is Invested";
2010 LPRINT TABTB4
2020 GOTO 2460
2030 IF TABTB5>TABTB6 THEN GOTO 2040 ELSE GOTO 2070
2040 LPRINT "IRA Is Distributed As An Annuity With 100% Payment To Spouse";

2050 LPRINT TABTB5
2060 GOTO 2460
2070 LPRINT "IRA Is Distributed As An Annuity With 50% Payment To Spouse";
2080 LPRINT TABTB6
2090 GOTO 2460
2100 REM Options if distribution is at age 70 1/2
2110 FOR OPT=1 TO 3
2120 REM Opt=1 => Lump sum distribution
2130 IF OPT=1 THEN GOSUB 2520 ELSE GOTO 2170

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2140 GOTO 2180
2150 REM Opt=2 => Annuity with 100% payment to spouse
2160 REM Opt=3 => Annuity with 50% payment to spouse
2170 IF OPT=2 THEN GOSUB 4870 ELSE GOSUB 6500
2180 LPRINT "Taxpayer";
2190 LPRINT TAXPAYER;
2200 LPRINT "Option";
2210 LPRINT OPT;
2220 LPRINT "Income Tax";
2230 LPRINT IT;
2240 LPRINT "Total Tax";
2250 LPRINT TT;
2260 LPRINT "Amount Bequeathed To Beneficiary";
2270 LPRINT TABTB
2280 LPRINT
2290 IF OPT=1 THEN TABTB1=TABTB ELSE GOTO 2310
2300 GOTO 2320
2310 IF OPT=2 THEN TABTB2=TABTB ELSE TABTB3=TABTB
2320 NEXT
2330 LPRINT
2340 REM Lines 1484-1540--To determine the optimal distribution option if d
distribution is at age 70 1/2
2350 IF TABTB1>TABTB2 THEN GOTO 2360 ELSE GOTO 2400
2360 IF TABTB1>TABTB3 THEN GOTO 2370 ELSE GOTO 2400
2370 LPRINT "Lump Sum Distribution";
2380 LPRINT TABTB1
2390 GOTO 2460
2400 IF TABTB2>TABTB3 THEN GOTO 2410 ELSE GOTO 2440
2410 LPRINT "Annuity With 100% Payment To Spouse";
2420 LPRINT TABTB2
2430 GOTO 2460
2440 LPRINT "Annuity With 50% Payment To Spouse";
2450 LPRINT TABTB3
2460 LPRINT
2470 LPRINT
2480 LPRINT
2490 RETURN
2500 REM Start of Opt=1 program
2510 REM To sort because of the different tax treatments if there were pre-
1974 contributions
2520 IF P74=0 THEN GOTO 2530 ELSE GOTO 3650
2530 ASAT=0: ASAS=0: SILS=0
2540 REM To sort because the tax treatment depends on the age
2550 IF AGE=65 THEN GOTO 2570 ELSE GOTO 3330
2560 REM Lines 1556-1616--Input data
2570 IF TAXPAYER=1 THEN GOSUB 2590 ELSE GOSUB 2610
2580 GOTO 2670
2590 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=31615.21: OTI=1000: OA=50
000!:
2600 RETURN
2610 IF TAXPAYER=2 THEN GOSUB 2630 ELSE GOSUB 2650
2620 RETURN
2630 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.15: NAI=63230.48: OTI=12000!:
OA=150000!:
2640 RETURN
2650 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.31: NAI=126460.83#: OT
I=170000!: OA=2000000!
2660 RETURN
2670 IF CONTR=1 THEN GOSUB 2690 ELSE GOSUB 2710
2680 GOTO 2740
2690 CE=0:
2700 RETURN
2710 CE=.12:
2720 RETURN
2730 REM To determine the longest life expectancy of spouses
2740 IF LLET<LES THEN LLE=LES ELSE LLE=LLET

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2750 IF AGE=65 THEN RL=17 ELSE RL=13
2760 REM Lines 1628-1636--To determine the income taxes on the other taxable income
2770 TI=OTI
2780 IF TI<=64750! THEN GOSUB 15680 ELSE GOSUB 16360
2790 TOTI=ITIR
2800 REM Lines 1640-1688--To determine the 10-year averaging taxes
2810 TLSD=((FB*(1-CE))+2480)
2820 IF TLSD>7000 THEN GOTO 2830 ELSE GOTO 2870
2830 TI=((FB*(1-CE)*.1)+2480)
2840 IF TI<=31080 THEN GOSUB 16020 ELSE GOSUB 16480
2850 IT10A=(ITIR*10)+TOTI
2860 GOTO 2940
2870 IF TLSD<=20000 THEN GOTO 2900 ELSE GOTO 2880
2880 MDA=(10000-((TLSD-20000)*.2))
2890 GOTO 2910
2900 MDA=10000
2910 TI=((TLSD-MDA)*.1)+2480
2920 IF TI<=31080 THEN GOSUB 16020 ELSE GOSUB 16480
2930 REM Lines 1689-1691--To determine the income taxes on other taxable income
2940 TI=OTI
2950 GOSUB 17510
2960 REM Lines 1692-1740--To determine the 5-year averaging taxes
2970 TLSD=(FB*(1-CE))
2980 IF TLSD>70000! THEN GOTO 2990 ELSE GOTO 3030
2990 TI=(FB*(1-CE)*.2)
3000 GOSUB 17600
3010 IT5A=(ITIR*5)+TOTI5
3020 GOTO 3110
3030 IF TLSD<=20000 THEN GOTO 3060 ELSE GOTO 3040
3040 MDA=(10000-((TLSD-20000)*.2))
3050 GOTO 3070
3060 MDA=10000
3070 TI=((TLSD-MDA)*.2)
3080 GOSUB 17600
3090 IT5A=(ITIR*5)+TOTI5
3100 REM Lines 1744-1752--To determine income taxes if the 10-year averaging and the 5-year averaging methods are not elected
3110 CTI=OTI+(FB*(1-CE))
3120 TI=CTI
3130 GOSUB 17510
3140 REM Lines 1756-1768--To determine the lowest income taxes from regular, 10-year averaging and 5-year averaging
3150 IF IT5A<ITIR THEN GOTO 3160 ELSE GOTO 3180
3160 IF IT5A<IT10A THEN ITLS=IT5A-TOTI5 ELSE GOTO 3180
3170 GOTO 3200
3180 IF ITIR<IT10A THEN ITLS=ITIR-TOTI5 ELSE ITLS=IT10A-TOTI
3190 REM After tax investment
3200 IVLS=FB-ITLS
3210 REM Lines 1780-1796--To determine the amount of accumulated savings related to the plan
3220 FOR I=1 TO LLE
3230 SILS=SILS+(IVLS*RS*(1-TRI)*S*(1+RS*(1-TRI))^(LLE-I))
3240 NEXT
3250 ASILS=IVLS+SILS
3260 AS=ASILS
3270 REM Total income taxes
3280 IT=ITLS+(IVLS*RS*TRI*LLE)+((ASILS-IVLS-(IVLS*RS*(1-TRI)*S*LLE))/(1-TRI))*TRI
3290 REM To go to calculate the estate taxes and the amount bequeathed to the beneficiaries
3300 GOSUB 16640
3310 RETURN
3320 REM Start of calculations if distribution is at age 70 1/2
3330 YR=6: RP=9.000001E-02:

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3340 REM Lines 1816-1864--Input data
3350 IF TAXPAYER=1 THEN GOTO 3360 ELSE GOTO 3380
3360 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=42576.8: OTI=1000: OA=500
00!:
3370 GOTO 3420
3380 IF TAXPAYER=2 THEN GOTO 3390 ELSE GOTO 3410
3390 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.15: NAI=85152.68: OTI=12000!:
OA=150000!:
3400 GOTO 3420
3410 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.31: NAI=170306.27#: OT
I=170000!: OA=2000000!:
3420 IF CONTR=1 THEN GOSUB 3440 ELSE GOSUB 3460
3430 GOTO 3490
3440 CE=0:
3450 RETURN
3460 CE=.12:
3470 RETURN
3480 REM To sort to determine if taxpayer is alive at age 70 1/2
3490 IF LLET>3 THEN GOTO 3510 ELSE GOTO 3550
3500 REM Lines 1872-1884--To determine the retirement fund balance accumula
ted thru age 70 1/2
3510 FBR=FB*(1+RP)^YR
3520 FB=FBR
3530 IF LLET<LES THEN LLE=LES-YR ELSE LLE=LLET-YR
3540 GOTO 2770
3550 IF LES=2 THEN GOTO 3560 ELSE RETURN
3560 YRD=2: RP=9.000001E-02
3570 REM 1896-1900--To determine retirement fund balance until taxpayer's d
eath and spouse's death
3580 FBD=FB*(1+RP)^YRD
3590 AS=FBD
3600 IT=0
3610 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
3620 GOSUB 16640
3630 RETURN
3640 REM Start of program if pre-1974 participation=25%
3650 ASAT=0: ASAS=0: SILS=0
3660 REM To sort because age at distribution affects annuity receipts
3670 IF AGE=65 THEN GOTO 3690 ELSE GOTO 4510
3680 REM Lines 1920-1980--Input data
3690 IF TAXPAYER=1 THEN GOSUB 3710 ELSE GOSUB 3730
3700 GOTO 3790
3710 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=31615.21: OTI=1000: P74=
25: OA=50000!:
3720 RETURN
3730 IF TAXPAYER=2 THEN GOSUB 3750 ELSE GOSUB 3770
3740 RETURN
3750 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.15: NAI=63230.48: OTI=12000!:
P74=.25: OA=150000!:
3760 RETURN
3770 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.31: NAI=126460.83#: OT
I=170000!: OA=2000000!: P74=.25:
3780 RETURN
3790 IF CONTR=1 THEN GOSUB 3810 ELSE GOSUB 3830
3800 GOTO 3860
3810 CE=0:
3820 RETURN
3830 CE=.12:
3840 RETURN
3850 REM To determine the longest life expectancy of the spouses
3860 IF LLET<LES THEN LLE=LES ELSE LLE=LLET
3870 IF AGE=65 THEN RL=17 ELSE RL=13
3880 REM Lines 1992-2000--To determine the income taxes on other taxable in
come
3890 TI=OTI

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3900 IF TI<=64750! THEN GOSUB 15680 ELSE GOSUB 16360
3910 TOTI=ITIR
3920 REM Lines 2004--2067--To determine the 10-year averaging taxes
3930 TI=(FB*(1-CE)*P74*.4)+OTI
3940 IF TI <64750! THEN GOSUB 15680 ELSE GOSUB 16360
3950 TCGD=ITIR
3960 TFB=FB*(1-CE)*(1-P74)
3970 IF TFB>=70000! THEN GOTO 3980 ELSE GOTO 4020
3980 TI=(TFB*.1)+2480
3990 IF TI<31080! THEN GOSUB 16020 ELSE GOSUB 16480
4000 TOID=ITIR*10
4010 GOTO 4100
4020 IF TFB<=20000 THEN GOTO 4050 ELSE GOTO 4030
4030 MDA=(10000-((TFB-20000)*.2))
4040 GOTO 4060
4050 MDA=10000
4060 TI=(((FB*(1-CE)*(1-P74))-MDA)*.1)+2480)
4070 IF TI<31080 THEN GOSUB 16020 ELSE GOSUB 16480
4080 TOID=ITIR*10
4090 T10ACG=TCGD+TOID
4100 REM Lines 2069-2071--To determine the income taxes on other taxable in
come
4110 TI=OTI
4120 GOSUB 17510
4130 TOTI5=ITIR
4140 REM Lines 2073-2128--To determine the 5-year averaging taxes
4150 TCGD=TOTI5+(FB*(1-CE)*P74*.2)
4160 TFB=FB*(1-CE)*(1-P74)
4170 IF TFB>=70000! THEN GOTO 4180 ELSE GOTO 4220
4180 TI=(TFB*.2)
4190 GOSUB 17600
4200 TQID=ITIR*5
4210 GOTO 4290
4220 IF TFB<=20000 THEN GOTO 4250 ELSE GOTO 4230
4230 MDA=(10000-((TFB-20000)*.2))
4240 GOTO 4260
4250 MDA=10000
4260 TI=(((FB*(1-CE)*(1-P74))-MDA)*.2)
4270 GOSUB 17600
4280 TQID=ITIR*5
4290 TSACG=TCGD+TQID
4300 REM Lines 2132-2136--To determine the income taxes if 10-year averagin
g and 5-year averaging are not elected
4310 TI=OTI+(FB*(1-CE))
4320 GOSUB 17510
4330 REM Lines 2140-2146--To determine the lowest income taxes from regular
, 10-year averaging and 5-year averaging
4340 IF TSACG<T10ACG THEN GOTO 4350 ELSE GOTO 4370G
4350 IF TSACG < ITIR THEN ITLS=TSACG-TOTI5 ELSE GOTO 4370
4360 GOTO 4390
4370 IF T10ACG < ITIR THEN ITLS=T10ACG-TOTI ELSE ITLS=ITIR-TOTI5
4380 REM After tax investment
4390 IVCG=FB-ITLS
4400 REM Lines 2152-2168--To determine the amount of savings accumulated re
lated to the plan over the lives of the taxpayer and the spouse
4410 FOR I=1 TO LLE
4420 SILS=SILS+(IVCG*RS*(1-TRI)*S*(1+RS*(1-TRI))^(LLE-I))
4430 NEXT
4440 ASILS=IVCG+SILS
4450 AS=ASILS
4460 IT=ITLS+(IVCG*RS*TRI*LLE)+((ASILS-IVCG-(IVCG*RS*(1-TRI)*S*LLE))/(1-TRI
))*TRI
4470 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
4480 GOSUB 16640
4490 RETURN

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4500 REM Lines 2184-2248--Input data if age=70 1/2 and pre-1974 contributio
ns=25%
4510 YR=6: RL=13: RP=9.000001E-02:
4520 IF TAXPAYER=1 THEN GOSUB 4540 ELSE GOSUB 4560
4530 GOTO 4620
4540 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=42576.8: OTI=1000!: P74=.
25: OA=50000!:
4550 RETURN
4560 IF TAXPAYER=2 THEN GOSUB 4580 ELSE GOSUB 4600
4570 RETURN
4580 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.15: NAI=85152.68: OTI=12000!:
P74=.25: OA=150000!:
4590 RETURN
4600 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.31: NAI=170306.27#: OT
I=170000!: P74=.25: OA=2000000!
4610 RETURN
4620 IF CONTR=1 THEN GOSUB 4640 ELSE GOSUB 4660
4630 GOTO 4690
4640 CE=0:
4650 RETURN
4660 CE=.12:
4670 RETURN
4680 REM To sort to determine if taxpayer is alive at age 70 1/2
4690 IF LLET>3 THEN GOTO 4710 ELSE GOTO 4780
4700 REM Lines 2256-2260--To determine the retirement fund balance accumula
ted thru age 70 1/2
4710 FBR=FB*(1+RP)^YR
4720 FB=FBR
4730 IF LLET<LES THEN LLE=LES-YR ELSE LLE=LLET-YR
4740 IF AGE=65 THEN RL=17 ELSE RL=13
4750 REM To go to calculate income taxes (lines 1992-2146)
4760 GOTO 3890
4770 REM Lines 2276-2292--To determine the retirement fund balance at the d
eath of the taxpayer and the spouse if before taxpayer reaches age 70 1/2
4780 IF LES=2 THEN GOTO 4790 ELSE RETURN
4790 YRD=2: RP=9.000001E-02:
4800 FBD=FB*(1+RP)^YRD
4810 AS=FBD
4820 IT=0
4830 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
4840 GOSUB 16640
4850 RETURN
4860 REM To start program if Opt=2
4870 ASA=0: ASAS=0: AAE=0: ASA3=0:
4880 REM Lines 2308-2396--Input data at age 65
4890 IF TAXPAYER=1 THEN GOSUB 4910 ELSE GOSUB 4930
4900 GOTO 4990
4910 FB=70000!: RI=.08: RS=.06: TRI=.15: OA=50000!:
4920 RETURN
4930 IF TAXPAYER=2 THEN GOSUB 4950 ELSE GOSUB 4970
4940 RETURN
4950 FB=140000!: RI=.08: RS=.08: TRI=.19: OA=150000!:
4960 RETURN
4970 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.31: OA=2000000!:
4980 RETURN
4990 IF AGE=65 THEN GOTO 5000 ELSE GOTO 6090
5000 IF CONTR=1 THEN GOSUB 5020 ELSE GOSUB 5070
5010 GOTO 5120
5020 CE=0:
5030 IF TAXPAYER=1 THEN C=3085.25 ELSE GOTO 5050
5040 RETURN
5050 IF TAXPAYER=2 THEN C=6004.23 ELSE C=2566.47
5060 RETURN
5070 CE=.12:
5080 IF TAXPAYER=1 THEN C=3283.14 ELSE GOTO 5100

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5090 RETURN
5100 IF TAXPAYER=2 THEN C=6359.74 ELSE C=2778.14
5110 RETURN
5120 IF LLET<LES THEN GOTO 5130 ELSE GOTO 5180
5130 LLE=LES
5140 IF ADBS=0 THEN RL=17 ELSE GOTO 5160
5150 GOTO 5200
5160 IF ADBS=5 THEN RL=20 ELSE RL=23
5170 GOTO 5200
5180 LLE=LLET: RL=17:
5190 REM To go to determine the amount of annual annuity receipts
5200 IF RL=17 THEN GOSUB 5990 ELSE GOSUB 6030
5210 REM Inclusion ratio
5220 IF CONTR=1 THEN GOTO 5860 ELSE IR=1-((CE*FB)/(A*RL))
5230 REM Annual exclusion
5240 ER=1-IR
5250 REM Employee's investment in the annuity
5260 EIIA=CE*FB
5270 REM Lines 2444-2456--To determine if the employee's investment in the
annuity is recovered during the spouses lives
5280 FOR I=1 TO LLE
5290 IF AAE < EIIA THEN GOTO 5300 ELSE GOTO 5570
5300 AAE=AAE + (A*ER)*(I-(I-1))
5310 NEXT
5320 REM Unrecovered employee cost
5330 URC=EIIA-AAE
5340 LLE1=LLE-1
5350 ITA1=A*IR*TRI*LLE1
5360 REM Income taxes on annuity
5370 REM Income taxes for the taxpayer's last tax year
5380 ITA2=((A*IR)-URC)*TRI
5390 ITA=ITA1+ITA2
5400 REM Annual savings
5410 S=(A*(1-(IR*TRI))) - C
5420 REM Lines 2484-2508--To determine the amount of accumulated savings
5430 FOR I=1 TO LLE1
5440 ASA=ASA+(S*(1+RS*(1-TRI))^(LLE1-I))
5450 NEXT
5460 ASA1=A-ITA2
5470 IF ASA1 > C THEN ASA2=ASA1-C ELSE ASA2=0
5480 ASA3=ASA*(RS*(1-TRI))
5490 AS=ASA+ASA2+ASA3
5500 ITAS=((AS-(S*LLE1)-ASA2)/(1-TRI))*TRI
5510 REM Total income taxes
5520 IT=ITA+ITAS
5530 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
5540 GOSUB 16640
5550 RETURN
5560 REM Lines 2528-2556--To determine the income taxes on the annuity rece
pts if the employee's cost is recovered before the last surviving spouse's
death
5570 NOY=I-1
5580 LLE1=NOY-1
5590 ITA1=(A*IR*TRI*LLE1)
5600 RAAE=(A*ER)-(AAE-EIIA)
5610 ITA2=(A-RAAE)*TRI
5620 LLE2=LLE-NOY
5630 ITA3=A*TRI*LLE2
5640 ITA=ITA1+ITA2+ITA3
5650 REM Lines 2560-2568--To determine the annual savings
5660 S1=(A*(1-(IR*TRI))) - C
5670 S2=((A-RAAE)*(1-TRI))+RAAE-C
5680 S3=(A*(1-TRI)) - C
5690 LLE3=LLE-LLE1
5700 REM Lines 2576-2604--To determine the amount of accumulated savings

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5710 FOR I=1 TO LLE1
5720 ASA=ASA+(S1*(1+RS*(1-TRI))^(LLE1-I))*(1+RS*(1-TRI))^(LLE3
5730 NEXT
5740 ASA2=S2*(1+RS*(1-TRI))^(LLE2)
5750 FOR I=1 TO LLE2
5760 ASA3=ASA3+(S3*(1+RS*(1-TRI))^(LLE2-I))
5770 NEXT
5780 AS=ASA+ASA2+ASA3
5790 ITAS=((AS-(S1*LLE1)-S2-(S3*LLE2))/(1-TRI))*TRI
5800 REM Total income taxes
5810 IT=ITA+ITAS
5820 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
5830 GOSUB 16640
5840 RETURN
5850 REM Income taxes related to the annuity receipts
5860 ITA=(A*TRI*LLE)+(.5*A*TRI*NPS)
5870 REM Lines 2628-2644--To determine the annual savings and the accumulat
ed savings
5880 S=(A*(1-TRI))-C
5890 FOR I=1 TO LLE
5900 ASA=ASA+(S*(1+RS*(1-TRI))^(LLE-I))
5910 NEXT
5920 AS=ASA
5930 ITAS=((AS-(S*LLE))/(1-TRI))*TRI
5940 REM Total income taxes
5950 IT=ITA+ITAS
5960 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
5970 RETURN
5980 REM Lines 2664-2692--To determine the annual annuity receipts
5990 PVOA=8.543629
6000 A=FB/PVOA
6010 RETURN
6020 REM Lines 2676-2745--Input data
6030 IF RL=13 THEN PVOA=7.4869 ELSE GOTO 6050
6040 GOTO 6060
6050 IF RL=20 THEN PVOA=9.128549 ELSE PVOA=9.58021
6060 A=FB/PVOA
6070 RETURN
6080 REM Lines 2696-2740--Input data if age=70 1/2
6090 IF CONTR=1 THEN GOSUB 6110 ELSE GOSUB 6160
6100 GOTO 6230
6110 CE=0:
6120 IF TAXPAYER=1 THEN C=5086.47 ELSE GOTO 6140
6130 RETURN
6140 IF TAXPAYER=2 THEN C=9617.88 ELSE C=4123.24
6150 RETURN
6160 CE=.12:
6170 IF TAXPAYER=1 THEN C=5218.85 ELSE GOTO 6190
6180 RETURN
6190 IF TAXPAYER=2 THEN C=10003.71 ELSE C=4342.77
6200 RETURN
6210 REM To determine if the taxpayer is alive at age 70 1/2
6220 REM To determine if the spouse is alive when the taxpayer reaches age
70 1/2
6230 IF LES > 3 THEN GOTO 6240 ELSE GOTO 6410
6240 IF LES < 3 THEN GOTO 6250 ELSE GOTO 6260
6250 IF TAXPAYER=2 THEN TRI=.25 ELSE GOTO 6260
6260 RL=13: YR=6: RP=9.000001E-02:
6270 REM To determine the length of the annuity receipts period
6280 IF LLET<LES THEN LLE=LES-YR ELSE LLE=LLET-YR
6290 REM To determine the retirement fund balance at age 70 1/2
6300 FBR=FB*(1+RP)^YR
6310 REM Lines 2760-2780--To determine the annual annuity receipts
6320 IF LES=2 THEN GOTO 6330 ELSE GOTO 6350

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6330 PVOA=6.74987
6340 GOTO 6360
6350 PVOA=7.4869
6360 A=FBR/PVOA
6370 FB=FBR
6380 REM To go to calculate income taxes and accumulated savings (lines 243
2-2652)
6390 GOTO 5220
6400 REM Lines 2788-2801--To determine the retirement fund balance and inco
me taxes at the death of both spouses if before the taxpayer reaches age 70
1/2
6410 IF LES=2 THEN GOTO 6420 ELSE RETURN
6420 RL=13: YRD=2: RP=9.000001E-02:
6430 FBD=FB*(1+RP)^YRD
6440 AS=FBD
6450 IT=0
6460 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
6470 GOSUB 16640
6480 RETURN
6490 REM To start program if Opt=3
6500 ASAT=0: ASAS=0: AAE=0: AAE1=0: ASA=0: ASA1=0: ASA2=0: ASA3=0:
6510 REM Lines 2816-2940--Input data
6520 IF TAXPAYER=1 THEN GOSUB 6540 ELSE GOSUB 6560
6530 GOTO 6630
6540 FB=70000!: RI=.08: RS=.06: TRI=.15: OA=50000!:
6550 RETURN
6560 IF TAXPAYER=2 THEN GOSUB 6580 ELSE GOSUB 6600
6570 RETURN
6580 FB=140000!: RI=.08: RS=.08: TRI=.19: OA=150000!:
6590 RETURN
6600 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.31: OA=2000000!:
6610 RETURN
6620 REM To sort because age at distribution affects tax treatment
6630 IF AGE=65 THEN GOTO 6650 ELSE GOTO 8720
6640 REM Lines 2860-2940--Input data
6650 IF CONTR=1 THEN GOSUB 6670 ELSE GOSUB 6720
6660 GOTO 6770
6670 CE=0:
6680 IF TAXPAYER=1 THEN C=3085.25 ELSE GOTO 6700
6690 RETURN
6700 IF TAXPAYER=2 THEN C=6004.23 ELSE C=2566.47
6710 RETURN
6720 CE=.12:
6730 IF TAXPAYER=1 THEN C=3283.14 ELSE GOTO 6750
6740 RETURN
6750 IF TAXPAYER=2 THEN C=6359.74 ELSE C=2778.14
6760 RETURN
6770 IF LLET<LES THEN GOTO 6780 ELSE GOTO 6850
6780 LLE=LLET: NPS=LES-LLET
6790 IF ADBS=0 THEN RL=17 ELSE GOTO 6810
6800 GOTO 6870
6810 IF ADBS=5 THEN RL=20 ELSE GOTO 6830
6820 GOTO 6870
6830 IF ADBS=10 THEN RL=23 ELSE RL=17
6840 GOTO 6870
6850 LLE=LLET: NPS=0: RL=17:
6860 REM To go to determine the amount of annual annuity receipts
6870 IF RL=17 THEN GOSUB 8630 ELSE GOSUB 8660
6880 REM Inclusion ratio
6890 IF CONTR=1 THEN GOTO 8460 ELSE IR=1-((CE*FB)/(A*RL))
6900 REM The amount of annual annuity receipts excluded each year
6910 ER=1-IR
6920 REM The employee's investment in the annuity
6930 EIIA=CE*FB
6940 REM Lines 2960-2996--To determine if the sum of the exclusions has exc

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eeded the employee's investment in the annuity
6950 FOR I=1 TO LLE
6960 IF AAE < EIIA THEN GOTO 6970 ELSE GOTO 7850
6970 AAE=AAE + (A*ER)*(I-(I-1))
6980 NEXT
6990 IF LLET < LES THEN GOTO 7000 ELSE GOTO 7320
7000 AAE1=AAE
7010 FOR J=1 TO NPS
7020 IF AAE1 < EIIA THEN GOTO 7030 ELSE GOTO 7530
7030 AAE1=AAE1 + (A*.5*ER)*(J-(J-1))
7040 NEXT
7050 REM Lines 3000-3020--To determine the income taxes related to the annu
ity
7060 NPSY=J-1
7070 URC=EIIA-AAE1
7080 ITA1=A*IR*TRI*LLE
7090 ITA2=A*.5*TRI*(NPSY-1)*IR
7100 ITA3=((A*.5*IR)-URC)*TRI
7110 ITA=ITA1+ITA2+ITA3
7120 REM Lines 3024-3028--To determine the annual savings
7130 S1=(A*(1-(IR*TRI)))-C
7140 S2=(A*.5*(1-(IR*TRI)))-C
7150 REM Lines 3032-3064--To determine the accumulated savings
7160 FOR I=1 TO LLE
7170 ASA=ASA+(S1*(1+RS*(1-TRI))^(LLE-I))*(1+RS*(1-TRI))^NPS
7180 NEXT
7190 FOR I=1 TO (NPSY-1)
7200 ASA1=ASA1+S2*(1+RS*(1-TRI))^(NPSY-I)
7210 NEXT
7220 ASA2=(A*.5)-ITA3
7230 IF ASA2 > C THEN ASA3=ASA2-C ELSE ASA3=0
7240 AS=ASA+ASA1+ASA3
7250 ITAS=((AS-(S1*LLE)-(S2*(NPSY-1))-ASA3)/(1-TRI))*TRI
7260 REM Total income taxes
7270 IT=ITA+ITAS
7280 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
7290 GOSUB 16640
7300 RETURN
7310 REM Lines 3084-3100--To determine the income taxes related to the annu
ity if the taxpayer is the last surviving spouse
7320 URC=EIIA-AAE
7330 LLE1=LLE-1
7340 ITA1=A*IR*TRI*LLE1
7350 ITA2=((A*IR)-URC)*TRI
7360 ITA=ITA1+ITA2
7370 REM Lines 3104-3132--To determine the annual savings and accumulated s
avings from the annuity
7380 S=(A*(1-(IR*TRI)))-C
7390 FOR I=1 TO LLE1
7400 ASA=ASA+(S*(1+RS*(1-TRI))^(LLE1-I))
7410 NEXT
7420 ASA1=A-ITA2
7430 IF ASA1 > C THEN ASA2=ASA1-C ELSE ASA2=0
7440 ASA3=ASA*(RS*(1-TRI))
7450 AS=ASA+ASA2+ASA3
7460 ITAS=((AS-(S*LLE1)-ASA2)/(1-TRI))*TRI
7470 REM Total income taxes
7480 IT=ITA+ITAS
7490 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
7500 GOSUB 16640
7510 RETURN
7520 REM Lines 3152-3184--To determine the income taxes that relate to the
annuity if the sum of the exclusions exceeds the employee's investment in t
he annuity during the spouses lifetime

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7530 NPSY=J-2
7540 LLE2=NPS-NPSY
7550 ITA1=A*IR*TRI*LLE
7560 ITA2=A*.5*IR*TRI*NPSY
7570 RAAE=((A*.5*ER)-(AAE1-EIIA)
7580 ITA3=((A*.5)-RAAE)*TRI
7590 LLE3=LLE2-1
7600 ITA4=A*.5*TRI*LLE3
7610 ITA=ITA1+ITA2+ITA3+ITA4
7620 REM Lines 3188-3244--To determine the annual savings and the accumulat
ed savings
7630 S1=(A*(1-(IR*TRI))) -C
7640 S2=(A*.5*(1-(IR*TRI))) -C
7650 S3=((A*.5)-RAAE)*(1-TRI))+RAAE-C
7660 S4=(A*.5*(1-TRI)) -C
7670 FOR I=1 TO LLE
7680 ASA=ASA+(S1*(1+RS*(1-TRI))^(LLE-I))*(1+RS*(1-TRI))^NPS
7690 NEXT
7700 FOR I=1 TO NPSY
7710 ASA1=ASA1+(S2*(1+RS*(1-TRI))^(NPSY-I))*(1+RS*(1-TRI))^LLE2
7720 NEXT
7730 ASA2=S3*(1+RS*(1-TRI))^(LLE3)
7740 FOR I=1 TO LLE3
7750 ASA3=ASA3+(S4*(1+RS*(1-TRI))^(LLE3-I))
7760 NEXT
7770 AS=ASA+ASA1+ASA2+ASA3
7780 ITAS=((AS-(S1*LLE)-(S2*NPSY)-S3-(S4*LLE3))/(1-TRI))*TRI
7790 REM Total income taxes
7800 IT=ITA+ITAS
7810 REM To go to determine the estate taxes and the amount bequeathed to t
he beneficiaries
7820 GOSUB 16640
7830 RETURN
7840 REM Lines 3264-3296--To determine the income taxes that relate to the
annuity if the sum of the exclusions exceeds the employee's investment in t
he annuity during the taxpayer's lifetime
7850 NOY=I-1
7860 IF LLET < LES THEN GOTO 8140 ELSE GOTO 7870
7870 LLE1=NOY-1
7880 ITA1=(A*IR*TRI*LLE1)
7890 RAAE=(A*ER)-(AAE-EIIA)
7900 ITA2=(A-RAAE)*TRI
7910 LLE2=LLE-NOY
7920 ITA3=A*TRI*LLE2
7930 ITA=ITA1+ITA2+ITA3
7940 REM Lines 3300-3344--To determine the annual savings and the accumulat
ed savings
7950 S1=(A*(1-(IR*TRI))) -C
7960 S2=((A-RAAE)*(1-TRI))+RAAE-C
7970 S3=(A*(1-TRI)) -C
7980 LLE3=LLE-LLE1
7990 FOR I=1 TO LLE1
8000 ASA=ASA+(S1*(1+RS*(1-TRI))^(LLE1-I))*(1+RS*(1-TRI))^LLE3
8010 NEXT
8020 ASA1=S2*(1+RS*(1-TRI))^(LLE2)
8030 FOR I=1 TO LLE2
8040 ASA2=ASA2+(S3*(1+RS*(1-TRI))^(LLE2-I))
8050 NEXT
8060 AS=ASA+ASA1+ASA2
8070 ITAS=((AS-(S1*LLE1)-S2-(S3*LLE2))/(1-TRI))*TRI
8080 REM Total income taxes
8090 IT=ITA+ITAS
8100 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
8110 GOSUB 16640
8120 RETURN

```

```

8130 REM Lines 3364-3392--To determine the income taxes that relate to the
annuity if the spouse survives the taxpayer
8140 LLE1=NOY-1
8150 LLE2=LLE-NOY
8160 ITA1=(A*IR*TRI*LLE1)
8170 RAAE=(A*ER)-(AAE-EIIA)
8180 ITA2=(A-RAAE)*TRI
8190 ITA3=A*TRI*LLE2
8200 ITA4=A*.5*TRI*NPS
8210 ITA=ITA1+ITA2+ITA3+ITA4
8220 REM Lines 3396-3456--To determine the annual savings and the accumulat
ed savings
8230 S1=(A*(1-(IR*TRI)))-C
8240 S2=((A-RAAE)*(1-TRI))+RAAE-C
8250 S3=(A*(1-TRI))-C
8260 S4=(A*.5*(1-TRI))-C
8270 LLE3=(LLE-LLE1)+NPS
8280 FOR I=1 TO LLE1
8290 ASA=ASA+(S1*(1+RS*(1-TRI))^(LLE1-I))*(1+RS*(1-TRI))^LLE3
8300 NEXT
8310 ASA1=(S2*(1+RS*(1-TRI))^LLE2)*(1+RS*(1-TRI))^NPS
8320 FOR I=1 TO LLE2
8330 ASA2=ASA2+(S3*(1+RS*(1-TRI))^(LLE2-I))*(1+RS*(1-TRI))^NPS
8340 NEXT
8350 FOR I=1 TO NPS
8360 ASA3=ASA3+(S4*(1+RS*(1-TRI))^(NPS-I))
8370 NEXT
8380 AS=ASA+ASA1+ASA2+ASA3
8390 ITAS=((AS-(S1*LLE1)-S2-(S3*LLE2)-(S4*NPSY))/(1-TRI))*TRI
8400 REM Total income taxes
8410 IT=ITA+ITAS
8420 REM To go to determine the estate taxes and the amount bequeathed to t
he beneficiaries
8430 GOSUB 16640
8440 RETURN
8450 REM To determine the income taxes that relate to the annuity if the em
ployee did not have any contributions to the retirement fund
8460 ITA=(A*TRI*LLE)+(.5*A*TRI*NPS)
8470 REM Lines 3480-3508--To determine the annual savings and the accumulat
ed savings
8480 S=(A*(1-TRI))-C
8490 FOR I=1 TO LLE
8500 ASAT=ASAT+(S*(1+RS*(1-TRI))^(LLE-I))*(1+RS*(1-TRI))^NPS
8510 NEXT
8520 FOR J=1 TO NPS
8530 ASAS=ASAS+.5*S*(1+RS*(1-TRI))^(NPS-J)
8540 NEXT
8550 AS=ASAT+ASAS
8560 ITAS=((AS-(S*LLE)-(.5*S*NPS))/(1-TRI))*TRI
8570 REM Total income taxes
8580 IT=ITA+ITAS
8590 REM To go to determine the estate taxes and the amount bequeathed to t
he beneficiaries
8600 GOSUB 16640
8610 RETURN
8620 REM Lines 3524-3552--To determine the amount of annual annuity receipt
s
8630 PVOA=8.02155
8640 A=FB/PVOA
8650 RETURN
8660 IF RL=13 THEN PVOA=7.10336 ELSE GOTO 8680
8670 GOTO 8690
8680 IF RL=20 THEN PVOA=8.51356 ELSE PVOA=8.88322
8690 A=FB/PVOA
8700 RETURN
8710 REM Lines 3556-3640--Input data if age=70 1/2

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8720 IF TAXPAYER=1 THEN GOSUB 8740 ELSE GOSUB 8760
8730 GOTO 8820
8740 FB=70000!: RI=.08: RS=.06: TRI=.15: OA=50000!.
8750 RETURN
8760 IF TAXPAYER=2 THEN GOSUB 8780 ELSE GOSUB 8800
8770 RETURN
8780 FB=140000!: RI=.08: RS=.08: TRI=.19: OA=150000!
8790 RETURN
8800 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.31: OA=2000000!:
8810 RETURN
8820 IF CONTR=1 THEN GOSUB 8840 ELSE GOSUB 8890
8830 GOTO 8960
8840 CE=0:
8850 IF TAXPAYER=1 THEN C=5086.46 ELSE GOTO 8870
8860 RETURN
8870 IF TAXPAYER=2 THEN C=9617.88 ELSE C=4123.24
8880 RETURN
8890 CE=.12:
8900 IF TAXPAYER=1 THEN C=5218.85 ELSE GOTO 8920
8910 RETURN
8920 IF TAXPAYER=2 THEN C=10003.71 ELSE C=4342.77
8930 RETURN
8940 REM To determine if the taxpayer is alive at age 70 1/2
8950 IF LLET>3 THEN GOTO 8970 ELSE GOTO 9210
8960 REM To determine if the spouse is alive when the taxpayer reaches age
70 1/2
8970 IF LES < 3 THEN GOTO 8980 ELSE GOTO 8990
8980 IF TAXPAYER=2 THEN TRI=.25 ELSE GOTO 8990
8990 RL=13: YR=6: RP=9.000001E-02:
9000 REM To determine which spouse lives the longest
9010 IF LLET<LES THEN GOTO 9020 ELSE GOTO 9070
9020 LLE=LLET-YR: NPS=LES-LLET
9030 REM To determine the retirement fund balance at age 70 1/2
9040 FBR=FB*(1+RP)^YR
9050 PVOA=7.10336
9060 GOTO 9160
9070 RL=13: YR=6: RP=9.000001E-02:
9080 LLE=LLET-YR: NPS=0
9090 REM To determine the retirement fund balance at age 70 1/2
9100 FBR=FB*(1+RP)^YR
9110 REM Lines 3680-3700--To determine the amount of annual annuity receipt
s
9120 IF LES=2 THEN GOTO 9130 ELSE GOTO 9150
9130 PVOA=6.74987
9140 GOTO 9160
9150 PVOA=7.10336
9160 A=FBR/PVOA
9170 FB=FBR
9180 REM To go to determine the income taxes and the accumulated savings
9190 GOTO 6890
9200 REM To determine if both spouses are alive when the taxpayer reaches a
ge 70 1/2
9210 IF LES=2 THEN GOTO 9220 ELSE RETURN
9220 YRD=2: RL=13: RP=9.000001E-02:
9230 REM To determine the retirement fund balance at the death of both spou
ses before the taxpayer reaches age 70 1/2
9240 FBD=FB*(1+RP)^YRD
9250 AS=FBD
9260 IT=0
9270 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
9280 GOSUB 16640
9290 RETURN
9300 REM To start program if Opt=4
9310 ASI=0:
9320 REM Lines 3736-3796--Input data

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9330 IF TAXPAYER=1 THEN GOSUB 9350 ELSE GOSUB 9370
9340 GOTO 9430
9350 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=42576.8: OTI=1000: OA=500
00!
9360 RETURN
9370 IF TAXPAYER=2 THEN GOSUB 9390 ELSE GOSUB 9410
9380 RETURN
9390 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.15: NAI=85152.68: OTI=12000!:
OA=150000!:
9400 RETURN
9410 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.31: NAI=170306.27#: O
TI=170000!: OA=2000000!:
9420 RETURN
9430 IF CONTR=1 THEN GOSUB 9450 ELSE GOSUB 9470
9440 GOTO 9500
9450 CE=0:
9460 RETURN
9470 CE=.12:
9480 RETURN
9490 REM To determine if the taxpayer is alive at age 70 1/2
9500 IF LLET>3 THEN GOTO 9520 ELSE GOTO 9890
9510 REM To determine if the spouse is alive when the taxpayer reaches age
70 1/2
9520 IF LES < 3 THEN SS=1 ELSE GOTO 9540
9530 TRI=.25
9540 YR=6
9550 REM To determine the time period after the IRA distribution
9560 IF LLET<LES THEN LLE=LES-YR ELSE LLE=LLET-YR
9570 REM To determine the IRA balance at age 70 1/2
9580 IB=FB*(1-CE)*(1+RI)^YR
9590 REM To determine the amount of the non-IRA investments accumulated thr
u age 70 1/2
9600 ASCE=FB*CE*(1+RS*(1-TRI))^YR
9610 REM Income taxes on the non-IRA investment earnings
9620 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
9630 REM Lines 3828-3836--To determine the income taxes on the other taxabl
e income
9640 TI=OTI
9650 GOSUB 17500
9660 TOTI=ITIR
9670 REM Lines 3840-3848--To determine the income taxes on the lump sum dis
tribution from the IRA
9680 TI=OTI+IB
9690 GOSUB 17500
9700 ITI=ITIR-TOTI
9710 REM After tax investments
9720 IV=(IB-ITI)+ASCE
9730 REM Lines 3856-3860--Amount of the IRA if both spouses die before taxp
ayer reaches age 70 1/2
9740 IF LLE=0 THEN AS=IB+ASCE ELSE GOTO 9780
9750 IT=ITCE
9760 GOTO 9860
9770 REM Lines 3868-3880--To determine the amount of earnings saved and acc
umulated over the lives of the spouses
9780 FOR I=1 TO LLE
9790 ASI=ASI+(IV*RS*(1-TRI)*S)*(1+RS*(1-TRI))^(LLE-I)
9800 NEXT
9810 ASII=ASI+IV
9820 REM Total income taxes
9830 IT=ITI+ITCE+(IV*RS*TRI*LLE)+((ASII-IV-(IV*RS*(1-TRI)*S*LLE))/(1-TRI))*
TRI
9840 AS=ASII
9850 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
9860 GOSUB 16640
9870 RETURN

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9880 REM To determine if both spouses die before the taxpayer reaches age 7
0 1/2
9890 IF LES=2 THEN GOTO 9900 ELSE GOTO 10020
9900 YRD=2:
9910 REM Lines 3908-3916--To determine the accumulated savings until the de
ath of both spouses
9920 IB=FB*(1-CE)*(1+RI)^YRD
9930 ASCE=FB*(CE)*(1+RS*(1-TRI))^YRD
9940 AS=IB+ASCE
9950 ITCE=((ASCE-FB*CE)/(1-TRI))*TRI
9960 REM Total income taxes
9970 IT=ITCE
9980 REM To go to calculate the estate taxes and the amount bequeathed to t
he beneficiaries
9990 GOSUB 16640
10000 RETURN
10010 REM Start of program if taxpayer dies before age 70 1/2
10020 YRD=2: SS=1:
10030 REM To sort by age difference between the spouses
10040 IF ADBS=0 THEN GOTO 10060 ELSE GOTO 10140
10050 REM Lines 3944-3956--To determine the amount of IRA and non-IRA inves
tments at distribution date
10060 IB=FB*(1-CE)*(1+RI)^YRD
10070 LLE=LES-YRD
10080 ASCED=FB*CE*(1+RS*(1-TRI))^YRD
10090 ASCE=ASCED
10100 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
10110 IF TAXPAYER=2 THEN TRI=.25 ELSE GOTO 10120
10120 GOTO 9640
10130 REM Lines 3964-3984--To determine the amount of IRA and non-IRA inves
tments at distribution date
10140 YRR=ADBS-YRD
10150 LLE=LES-ADBS
10160 IBD=FB*(1-CE)*(1+RI)^YRD
10170 IB=IBD*(1+RI)^YRR
10180 ASCED=FB*CE*(1+RS*(1-TRI))^YRD
10190 ASCE=ASCED*(1+RS*(1-TRI))^YRR
10200 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
10210 IF TAXPAYER=2 THEN TRI=.25 ELSE GOTO 10230
10220 REM To go to determine the accumulated savings
10230 GOTO 9640
10240 REM To start the program for Opt=5
10250 ASA=0: AAE=0: ASA3=0:
10260 IF TAXPAYER=1 THEN GOTO 10280 ELSE GOTO 10300
10270 REM Lines 4000-4068--Input data
10280 FB=70000!: RI=.08: RS=.06: TRI=.15: OA=50000!
10290 GOTO 10350
10300 IF TAXPAYER=2 THEN GOTO 10310 ELSE GOTO 10330
10310 FB=140000!: RI=.08: RS=.08: TRI=.19: OA=150000!
10320 GOTO 10350
10330 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.31: OA=2000000!
10340 REM To determine if the taxpayer is alive at age 70 1/2
10350 IF LLET>3 THEN GOTO 10360 ELSE GOTO 11420
10360 IF CONTR=1 THEN GOTO 10370 ELSE GOTO 10420
10370 CE=0: YR=6:
10380 IF TAXPAYER=1 THEN C=4167.05 ELSE GOTO 10400
10390 GOTO 10470
10400 IF TAXPAYER=2 THEN C=8021.25 ELSE C=3901.35
10410 GOTO 10470
10420 CE=.12: YR=6:
10430 IF TAXPAYER=1 THEN C=4288.96 ELSE GOTO 10450
10440 GOTO 10470
10450 IF TAXPAYER=2 THEN C=8313.16 ELSE C=4021.41
10460 REM To determine the longest life after the IRA distribution
10470 IF LLET<LES THEN LLE=LES-YR ELSE LLE=LLET-YR
10480 REM Lines 4072-4076--To determine the amount of the IRA and the non-I

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RA investment balance at age 70 1/2
10490 IB=FB*(1-CE)*(1+RI)^YR
10500 ASCE=FB*CE*(1+RS*(1-TRI))^YR
10510 RL=13
10520 REM To determine if spouse is alive when the taxpayer reaches age 70
1/2
10530 IF LES=2 THEN GOSUB 12380 ELSE GOTO 10540
10540 IF TAXPAYER=2 THEN TRI=.25 ELSE GOTO 10550
10550 GOTO 10600
10560 REM To go to determine the amount of annual annuity receipts
10570 IF RL=17 THEN GOSUB 12300 ELSE GOSUB 12340
10580 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
10590 REM Inclusion ratio
10600 IF CONTR=1 THEN GOTO 11220 ELSE IRCE=1-((ASCE)/(ACE*RL))
10610 REM Amount excluded each year
10620 ER=1-IRCE
10630 REM The amount of the employee's investment in the annuity
10640 EIIA=ASCE
10650 REM Lines 4112-4144--To determine the income taxes that relate to the
annuity
10660 FOR I=1 TO LLE
10670 IF AAE < EIIA THEN GOTO 10680 ELSE GOTO 10920
10680 AAE=AAE + (ACE*ER)*(I-(I-1))
10690 NEXT
10700 URC=EIIA-AAE
10710 LLE1=LLE-1
10720 ITA1=(ACE*IRCE*TRI*LLE1)+(AIB*TRI*LLE1)
10730 ITA2=((ACE*IRCE)-URC)*TRI+(AIB*TRI)
10740 ITA=ITA1+ITA2
10750 REM Lines 4148-4176--To determine the savings and the accumulated sav
ings
10760 S=(ACE*(1-(IRCE*TRI)))+(AIB*(1-TRI))-C
10770 FOR I=1 TO LLE1
10780 ASA=ASA+(S*(1+RS*(1-TRI))^(LLE1-I))
10790 NEXT
10800 ASA1=(ACE+AIB-ITA2)
10810 IF ASA1 > C THEN ASA2=ASA1-C ELSE ASA2=0
10820 ASA3=ASA*(RS*(1-TRI))
10830 AS=ASA+ASA2+ASA3
10840 ITAS=((AS-(S*LLE1)-ASA2)/(1-TRI))*TRI
10850 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
10860 REM Total income taxes
10870 IT=ITA+ITAS+ITCE
10880 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
10890 GOSUB 16640
10900 RETURN
10910 REM Lines 4200-4232--To determine the income taxes that relate to the
annuity if the sum of the exclusions exceeds the employee's investment in
the annuity before the taxpayer dies
10920 NOY=I-1
10930 LLE1=NOY-1
10940 ITA1=(ACE*IRCE*TRI*LLE1)
10950 RAAE=((ACE*ER)-(AAE-EIIA))
10960 ITA2=(ACE-RAAE)*TRI
10970 LLE2=LLE-NOY
10980 ITA3=ACE*TRI*LLE2
10990 ITA4=AIB*TRI*LLE
11000 ITA=ITA1+ITA2+ITA3+ITA4
11010 REM Lines 4236-4280--To determine the annual savings and accumulated
savings
11020 S1=(ACE*(1-(IRCE*TRI)))+(AIB*(1-TRI))-C
11030 S2=((ACE-RAAE+AIB)*(1-TRI))+RAAE-C
11040 S3=((ACE+AIB)*(1-TRI))-C
11050 LLE3=LLE-LLE1
11060 FOR I=1 TO LLE1

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11070 ASA=ASA+(S1*(1+RS*(1-TRI))^(LLE1-I))*(1+RS*(1-TRI))^(LLE3
11080 NEXT
11090 ASA2=S2*(1+RS*(1-TRI))^(LLE2)
11100 FOR I=1 TO LLE2
11110 ASA3=ASA3+(S3*(1+RS*(1-TRI))^(LLE2-I))
11120 NEXT
11130 AS=ASA+ASA2+ASA3
11140 ITAS=((AS-(S1*LLE1)-S2-(S3*LLE2))/(1-TRI))*TRI
11150 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
11160 REM Total income taxes
11170 IT=ITA+ITAS+ITCE
11180 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
11190 GOSUB 16640
11200 RETURN
11210 REM To determine the income taxes that relate to the annuity if the e
mployee did not have any contributions to the retirement plan
11220 ITA=(AIB*TRI*LLE)
11230 REM To determine if both spouses are alive at distribution date
11240 IF LLET < 3 AND LLE=0 THEN AS=IB ELSE GOTO 11300
11250 IT=0
11260 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
11270 GOSUB 16640
11280 RETURN
11290 REM Lines 4324-4340--To determine the amount of annual savings and ac
cumulated savings
11300 S=(AIB*(1-TRI))-C
11310 FOR I=1 TO LLE
11320 ASA=ASA+S*(1+RS*(1-TRI))^(LLE-I)
11330 NEXT
11340 AS=ASA
11350 ITAS=((AS-(S*LLE))/(1-TRI))*TRI
11360 REM Total income taxes
11370 IT=ITA+ITAS
11380 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
11390 GOSUB 16640
11400 RETURN
11410 REM To determine if both spouses die before the taxpayer reaches the
age of 70 1/2
11420 IF LES=2 THEN GOTO 11440 ELSE GOTO 11610
11430 REM Lines 4364-4380--Input data
11440 YRD=2
11450 IF TAXPAYER=2 THEN TRI=.15 ELSE GOTO 11460
11460 IF CONTR=1 THEN GOTO 11470 ELSE GOTO 11490
11470 CE=0
11480 GOTO 11510
11490 CE=.12
11500 REM Lines 4384-4392--To determine accumulated savings at death of bot
h spouses before the taxpayer reaches age 70 1/2
11510 IB=FB*(1-CE)*(1+RI)^YRD
11520 ASCE=FB*(CE)*(1+RS*(1-TRI))^YRD
11530 AS=IB+ASCE
11540 ITCE=((ASCE-FB*CE)/(1-TRI))*TRI
11550 REM Total income taxes
11560 IT=ITCE
11570 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
11580 GOSUB 16640
11590 RETURN
11600 REM Lines 4412-4464--Input data if taxpayer dies before age 70 1/2
11610 YRD=2:
11620 IF TAXPAYER=2 THEN TRI=.15 ELSE GOTO 11630
11630 IF ADBS=0 THEN GOTO 11640 ELSE GOTO 11910
11640 RL=16:

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11650 LLE=LES-YRD
11660 IF CONTR=1 THEN GOTO 11670 ELSE GOTO 11720
11670 CE=0
11680 IF TAXPAYER=1 THEN C=3009.11 ELSE GOTO 11700
11690 GOTO 11770
11700 IF TAXPAYER=2 THEN C=5195.39 ELSE C=2868.37
11710 GOTO 11770
11720 CE=.12:
11730 IF TAXPAYER=1 THEN C=3147.32 ELSE GOTO 11760
11740 GOTO 11770
11750 REM Lines 4464-4472--To determine the amount of the IRA and the amount
of non-IRA investment at the death of the taxpayer
11760 IF TAXPAYER=2 THEN C=5409.94 ELSE C=2986.51
11770 IB=FB*(1-CE)*(1+RI)^YRD
11780 ASCE=FB*CE*(1+RS*(1-TRI))^YRD
11790 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
11800 REM To determine the accumulated savings if both spouses die before the
distribution date
11810 IF LLE=0 THEN AS=IB+ASCE ELSE GOTO 11860
11820 REM Total income taxes
11830 IT=ITCE
11840 GOTO 11580
11850 REM To go to determine the amount of annual annuity receipts
11860 GOSUB 12420
11870 IF TAXPAYER=2 THEN TRI=.25 ELSE GOTO 10600
11880 REM To go to determine the income taxes
11890 GOTO 10600
11900 REM Lines 4500-4552--Input data if there is a 5 year age difference between
the spouses
11910 YRR=ADBS-YRD
11920 LLE=LES-ADBS
11930 RL=17
11940 IF ADBS=5 THEN GOTO 11950 ELSE GOTO 12180
11950 IF CONTR=1 THEN GOTO 11960 ELSE GOTO 12010
11960 CE=0:
11970 IF TAXPAYER=1 THEN C=3741.57 ELSE GOTO 11990
11980 GOTO 12060
11990 IF TAXPAYER=2 THEN C=6569.47 ELSE C=3613.31
12000 GOTO 12060
12010 CE=.12
12020 IF TAXPAYER=1 THEN C=3861.31 ELSE GOTO 12040
12030 GOTO 12060
12040 IF TAXPAYER=2 THEN C=6781.39 ELSE C=3733.66
12050 REM Lines 4556-4568--To determine the amount of the IRA and the amount
of the non-IRA investment at distribution date
12060 IBD=FB*(1-CE)*(1+RI)^YRD
12070 IB=IBD*(1+RI)^YRR
12080 ASCED=FB*CE*(1+RS*(1-TRI))^YRD
12090 ASCE=ASCED*(1+RS*(1-TRI))^YRR
12100 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
12110 IF LLE=0 THEN GOTO 11790 ELSE GOTO 12130
12120 REM To go to determine the amount of the annual annuity receipts
12130 GOSUB 12460
12140 IF TAXPAYER=2 THEN TRI=.25 ELSE GOTO 10600
12150 REM To go to determine the income taxes
12160 GOTO 10600
12170 REM Lines 4584-4620--Input data if there is a 10-year age difference
between the spouses
12180 IF CONTR=1 THEN GOTO 12190 ELSE GOTO 12240
12190 CE=0
12200 IF TAXPAYER=1 THEN C=5514.11 ELSE GOTO 12220
12210 GOTO 12060
12220 IF TAXPAYER=2 THEN C=9697.49 ELSE C=5309.14
12230 GOTO 12060
12240 CE=.12
12250 IF TAXPAYER=1 THEN C=5552.69 ELSE GOTO 12270

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12260 GOTO 12060
12270 IF TAXPAYER=2 THEN C=9876.22 ELSE C=5420.72
12280 REM Lines 4624-4704--To determine the amount of annual annuity receipts
12290 GOTO 12060
12300 PVOA=8.543629
12310 AIB=IB/PVOA
12320 ACE=ASCE/PVOA
12330 RETURN
12340 PVOA=7.4869
12350 AIB=IB/PVOA
12360 ACE=ASCE/PVOA
12370 RETURN
12380 PVOA=6.74987
12390 AIB=IB/PVOA
12400 ACE=ASCE/PVOA
12410 RETURN
12420 PVOA=7.37916
12430 AIB=IB/PVOA
12440 ACE=ASCE/PVOA
12450 RETURN
12460 PVOA=7.54879
12470 AIB=IB/PVOA
12480 ACE=ASCE/PVOA
12490 RETURN
12500 REM To start the program if Opt=6
12510 ASAI=0: ASAC=0: ASA=0: AAE=0: AAE1=0: ASA3=0: ASA2=0: ASA1=0:
12520 REM Lines 4712-4780--Input data
12530 IF TAXPAYER=1 THEN GOTO 12540 ELSE GOTO 12560
12540 FB=70000!: RI=.08: RS=.06: TRI=.15: OA=500000!:
12550 GOTO 12610
12560 IF TAXPAYER=2 THEN GOTO 12570 ELSE GOTO 12590
12570 FB=140000!: RI=.08: RS=.08: TRI=.19: OA=1500000!
12580 GOTO 12610
12590 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.31: OA=2000000!:
12600 REM To determine if the taxpayer is alive at 70 1/2
12610 IF LLET>3 THEN GOTO 12620 ELSE GOTO 14670
12620 IF CONTR=1 THEN GOTO 12630 ELSE GOTO 12680
12630 CE=0: YR=6:
12640 IF TAXPAYER=1 THEN C=4167.05 ELSE GOTO 12660
12650 GOTO 12730
12660 IF TAXPAYER=2 THEN C=8021.25 ELSE C=3901.35
12670 GOTO 12730
12680 CE=.12: YR=6:
12690 IF TAXPAYER=1 THEN C=4288.96 ELSE GOTO 12710
12700 GOTO 12730
12710 IF TAXPAYER=2 THEN C=8313.66 ELSE C=4021.41
12720 REM Lines 4784-4804--To determine the life expectancy of the taxpayer
  after the IRA distribution and to determine the life expectancy of the spouse
  after the IRA distribution
12730 IF LLET<LES THEN GOSUB 12750 ELSE GOSUB 12770
12740 GOTO 12800
12750 LLE=LLET-YR: NPS=LES-LLET
12760 RETURN
12770 LLE=LLET-YR: NPS=0
12780 REM Lines 4804-4812--To determine the amount of the IRA and the non-IRA
  investments at age 70 1/2
12790 RETURN
12800 IB=FB*(1-CE)*(1+RI)^YR
12810 ASCE=FB*CE*(1+RS*(1-TRI))^YR
12820 RL=13
12830 REM To determine if the spouse is alive when the taxpayer reaches age
  70 1/2
12840 IF LES=2 THEN GOSUB 12380 ELSE GOTO 12850
12850 IF TAXPAYER=2 THEN TRI=.25 ELSE GOTO 12860
12860 GOTO 12900

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12870 IF RL=17 THEN GOSUB 15510 ELSE GOSUB 15550
12880 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
12890 REM Inclusion ratio
12900 IF CONTR=1 THEN GOTO 14440 ELSE IRCE=1-((ASCE)/(ACE*RL))
12910 REM Amount excluded each year
12920 ER=1-IRCE
12930 REM The amount of the employee's investment in the annuity
12940 EIIA=ASCE
12950 REM Lines 4848-4908--To determine the income taxes that relate to the
annuity
12960 FOR I=1 TO LLE
12970 IF AAE < EIIA THEN GOTO 12980 ELSE GOTO 13830
12980 AAE=AAE + (ACE*ER)*(I-(I-1))
12990 NEXT
13000 IF LLET > 3 THEN GOTO 13010 ELSE GOTO 13320
13010 IF LLET < LLE THEN GOTO 13020 ELSE GOTO 13320
13020 AAE1=AAE
13030 FOR J=1 TO NPS
13040 IF AAE1 < EIIA THEN GOTO 13050 ELSE GOTO 13520
13050 AAE1=AAE1 + (ACE*.5*ER)*(J-(J-1))
13060 NEXT
13070 NPSY=J-1
13080 URC=EIIA-AAE1
13090 ITA1=(ACE*IRCE*TRI*LLE)+(AIB*TRI*LLE)
13100 ITA2=(ACE*.5*TRI*(NPSY-1)*IRCE)+(AIB*.5*TRI*(NPSY-1))
13110 ITA3=((ACE*.5*IRCE)-URC)*TRI+(AIB*.5*TRI)
13120 ITA=ITA1+ITA2+ITA3
13130 REM Lines 4912-4952--To determine the amount of annual savings and ac
cumulated savings
13140 S1=(ACE*(1-(IRCE*TRI)))+(AIB*(1-TRI))-C
13150 S2=(ACE*.5*(1-(IRCE*TRI)))+(AIB*.5*(1-TRI))-C
13160 FOR I=1 TO LLE
13170 ASA=ASA+(S1*(1+RS*(1-TRI))^(LLE-I))*(1+RS*(1-TRI))^NPS
13180 NEXT
13190 FOR I=1 TO (NPSY-1)
13200 ASA1=ASA1+S2*(1+RS*(1-TRI))^(NPSY-I)
13210 NEXT
13220 ASA2=((ACE+AIB)*.5)-ITA3
13230 IF ASA2 > C THEN ASA3=ASA2-C ELSE ASA3=0
13240 AS=ASA+ASA1+ASA3
13250 ITAS=((AS-(S1*LLE)-(S2*(NPSY-1))-ASA3)/(1-TRI))*TRI
13260 REM Total income taxes
13270 IT=ITA+ITAS
13280 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
13290 GOSUB 16640
13300 RETURN
13310 REM Lines 4972-5020--To determine the income taxes that relate to the
annuity if the sum of the exclusions exceeds the employee's investment in
the annuity before the taxpayer dies
13320 URC=EIIA-AAE
13330 LLE1=LLE-1
13340 ITA1=(ACE*IRCE*TRI*LLE1)+(AIB*TRI*LLE1)
13350 ITA2=((ACE*IRCE)-URC)*TRI+(AIB*TRI)
13360 ITA=ITA1+ITA2
13370 S=(ACE*(1-(IRCE*TRI)))+(AIB*(1-TRI))-C
13380 FOR I=1 TO LLE1
13390 ASA=ASA+(S*(1+RS*(1-TRI))^(LLE1-I))
13400 NEXT
13410 ASA1=ACE+AIB-ITA2
13420 IF ASA1 > C THEN ASA2=ASA1-C ELSE ASA2=0
13430 ASA3=ASA*(RS*(1-TRI))
13440 AS=ASA+ASA2+ASA3
13450 ITAS=((AS-(S*LLE1)-ASA2)/(1-TRI))*TRI
13460 REM Total income taxes
13470 IT=ITA+ITAS+ITCE

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13480 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
13490 GOSUB 16640
13500 RETURN
13510 REM Lines 5040-5072--To determine the income taxes that relate to the
annuity if the sum of the exclusions exceeds the employee's investment in
the annuity before the spouse dies
13520 NPSY=J-2
13530 LLE2=NPS-NPSY
13540 ITA1=(ACE*IRCE*TRI*LLE)+(AIB*TRI*LLE)
13550 ITA2=(ACE*.5*IRCE*TRI*NPSY)+(AIB*TRI*NPSY)
13560 RAAE=(ACE*.5*ER)-(AAE-EIIA)
13570 ITA3=((ACE*.5)-RAAE)*TRI+(AIB*.5*TRI)
13580 LLE3=LLE2-1
13590 ITA4=(ACE+AIB)*.5*TRI*LLE3
13600 ITA=ITA1+ITA2+ITA3+ITA4
13610 REM Lines 5076-5132--To determine the amount of annual savings and ac
cumulated savings
13620 S1=(ACE*(1-(IRCE*TRI)))+(AIB*(1-TRI))-C
13630 S2=(ACE*.5*(1-(IRCE*TRI)))+(AIB*.5*(1-TRI))-C
13640 S3=((ACE+AIB)*.5)-RAAE*(1-TRI)+RAAE-C
13650 S4=((ACE+AIB)*.5*(1-TRI))-C
13660 FOR I=1 TO LLE
13670 ASA=ASA+(S1*(1+RS*(1-TRI))^(LLE-I))*(1+RS*(1-TRI))^NPS
13680 NEXT
13690 FOR I=1 TO NPSY
13700 ASA1=ASA1+(S2*(1+RS*(1-TRI))^(NPSY-I))*(1+RS*(1-TRI))^LLE2
13710 NEXT
13720 ASA2=S3*(1+RS*(1-TRI))^(LLE3)
13730 FOR I=1 TO LLE3
13740 ASA3=ASA3+(S4*(1+RS*(1-TRI))^(LLE3-I))
13750 NEXT
13760 AS=ASA+ASA1+ASA2+ASA3
13770 ITAS=((AS-(S1*LLE)-(S2*NPSY)-S3-(S4*LLE3))/(1-TRI))*TRI
13780 REM Total income taxes
13790 IT=ITA+ITAS
13800 GOSUB 16640
13810 RETURN
13820 REM lines 5152-5184--To determine the income taxes that relate to the
annuity if the sum of the exclusions exceeds the employee's investment in
the annuity before the taxpayer dies
13830 NOY=I-1
13840 IF LLET < LES THEN GOTO 14120 ELSE GOTO 13850
13850 LLE1=NOY-1
13860 ITA1=(ACE*IRCE*TRI*LLE1)+(AIB*TRI*LLE1)
13870 RAAE=(ACE*ER)-(AAE-EIIA)
13880 ITA2=(ACE+AIB-RAAE)*TRI
13890 LLE2=LLE-NOY
13900 ITA3=(ACE+AIB)*TRI*LLE2
13910 ITA=ITA1+ITA2+ITA3
13920 REM Lines 5188-5232--To determine the amount of annual savings and a
ccumulated savings
13930 S1=(ACE*(1-(IRCE*TRI)))+(AIB*(1-TRI))-C
13940 S2=((ACE+AIB-RAAE)*(1-TRI))+RAAE-C
13950 S3=((ACE+AIB)*(1-TRI))-C
13960 LLE3=LLE-LLE1
13970 FOR I=1 TO LLE1
13980 ASA=ASA+(S1*(1+RS*(1-TRI))^(LLE1-I))*(1+RS*(1-TRI))^LLE3
13990 NEXT
14000 ASA1=S2*(1+RS*(1-TRI))^(LLE2)
14010 FOR I=1 TO LLE2
14020 ASA2=ASA2+(S3*(1+RS*(1-TRI))^(LLE2-I))
14030 NEXT
14040 AS=ASA+ASA1+ASA2
14050 ITAS=((AS-(S1*LLE1)-S2-(S3*LLE2))/(1-TRI))*TRI
14060 REM Total income taxes

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14070 IT=ITA+ITAS
14080 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
14090 GOSUB 16640
14100 RETURN
14110 REM Lines 5252-5280--To determine the income taxes that relate to the
annuity if the taxpayer's expected life is shorter than the spouse's life
and the sum of the exclusions exceeds the employee's investment in the annu
ity before the taxpayer dies
14120 LLE1=NOY-1
14130 LLE2=LLE-NOY
14140 ITA1=(ACE*IRCE*TRI*LLE1)+(AIB*TRI*LLE1)
14150 RAAE=(ACE*ER)-(AAE-EIIA)
14160 ITA2=(ACE+AIB-RAAE)*TRI
14170 ITA3=(ACE+AIB)*TRI*LLE2
14180 ITA4=(ACE+AIB)*.5*TRI*NPS
14190 ITA=ITA1+ITA2+ITA3+ITA4
14200 REM Lines 5284-5344--To determine the amount of annual savings and ac
cumulated savings
14210 S1=(ACE*(1-(IRCE*TRI)))+(AIB*(1-TRI))-C
14220 S2=((ACE+AIB-RAAE)*(1-TRI))+RAAE-C
14230 S3=((ACE+AIB)*(1-TRI))-C
14240 S4=((ACE+AIB)*.5*(1-TRI))-C
14250 LLE3=(LLE-LLE1)+NPS
14260 FOR I=1 TO LLE1
14270 ASA=ASA+(S1*(1+RS*(1-TRI))^(LLE1-I))*(1+RS*(1-TRI))^LLE3
14280 NEXT
14290 ASA1=(S2*(1+RS*(1-TRI))^LLE2)*(1+RS*(1-TRI))^NPS
14300 FOR I=1 TO LLE2
14310 ASA2=ASA2+(S3*(1+RS*(1-TRI))^(LLE2-I))*(1+RS*(1-TRI))^NPS
14320 NEXT
14330 FOR I=1 TO NPS
14340 ASA3=ASA3+(S4*(1+RS*(1-TRI))^(NPS-I))
14350 NEXT
14360 AS=ASA+ASA1+ASA2+ASA3
14370 ITAS=((AS-(S1*LLE1)-S2-(S3*LLE2)-(S4*NPS))/(1-TRI))*TRI
14380 REM Total income taxes
14390 IT=ITA+ITAS+ITCE
14400 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
14410 GOSUB 16640
14420 RETURN
14430 REM To determine the income taxes that relate to the annuity if the e
mployee did not have any contributions to the retirement plan
14440 ITA=(AIB*TRI*LLE)+(.5*AIB*TRI*NPS)
14450 REM To determine if both spouses die before the taxpayer reaches age
70 1/2
14460 IF LLET < 3 AND LLE=0 THEN AS=IB ELSE GOTO 14520
14470 IT=0
14480 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
14490 GOSUB 16640
14500 RETURN
14510 REM Lines 5384-5412--To determine the amount of annual savings and ac
cumulated savings
14520 S=(AIB*(1-TRI))-C
14530 FOR I=1 TO LLE
14540 ASAI=ASAI+(S*(1+RS*(1-TRI))^(LLE-I))*(1+RS*(1-TRI))^NPS
14550 NEXT
14560 FOR J=1 TO NPS
14570 ASAC=ASAC+S*.5*(1+RS*(1-TRI))^(NPS-J)
14580 NEXT
14590 AS=ASAI+ASAC
14600 ITAS=((AS-(S*LLE)-(.5*S*NPS))/(1-TRI))*TRI
14610 REM Total income taxes
14620 IT=ITA+ITAS

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14630 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
14640 GOSUB 16640
14650 RETURN
14660 REM To determine if both spouses die before the taxpayer reaches age
70 1/2
14670 IF LES=2 THEN GOTO 14680 ELSE GOTO 14840
14680 YRD=2
14690 IF TAXPAYER=2 THEN TRI=.15 ELSE GOTO 14700
14700 IF CONTR=1 THEN GOTO 14710 ELSE GOTO 14730
14710 CE=0:
14720 GOTO 14750
14730 CE=.12
14740 REM Lines 5456-5464--To determine the accumulated savings at the deat
h of both spouses
14750 IB=FB*(1-CE)*(1+RI)^YRD
14760 ASCE=FB*(CE)*(1+RS*(1-TRI))^YRD
14770 AS=IB+ASCE
14780 REM Total income taxes
14790 IT=ITCE
14800 REM To go to calculate the estate taxes and the amount bequeathed to
the beneficiaries
14810 GOSUB 16640
14820 RETURN
14830 REM Lines 5480-5536--Input data if the spouses are the same age
14840 YRD=2:
14850 IF TAXPAYER=2 THEN TRI=.15 ELSE GOTO 14860
14860 IF ADBS=0 THEN GOTO 14870 ELSE GOTO 15120
14870 RL=16:
14880 LLE=LES-YRD
14890 NPS=0:
14900 IF CONTR=1 THEN GOTO 14910 ELSE GOTO 14960
14910 CE=0
14920 IF TAXPAYER=1 THEN C=3009.11 ELSE GOTO 14940
14930 GOTO 15010
14940 IF TAXPAYER=2 THEN C=5195.39 ELSE C=2868.37
14950 GOTO 15010
14960 CE=.12:
14970 IF TAXPAYER=1 THEN C=3147.32 ELSE GOTO 14990
14980 GOTO 15010
14990 IF TAXPAYER=2 THEN C=5409.94 ELSE C=2986.51
15000 REM Lines 5540-5544--To determine the amount of the IRA and the non-I
RA investment at the death of both spouses before distribution date
15010 IB=FB*(1-CE)*(1+RI)^YRD
15020 ASCE=FB*CE*(1+RS*(1-TRI))^YRD
15030 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
15040 IF LLE=0 THEN AS=IB+ASCE ELSE GOTO 15080
15050 IT=ITCE
15060 GOTO 14810
15070 REM To go to determine the annual annuity receipts
15080 GOSUB 15590
15090 IF TAXPAYER=2 THEN TRI=.25 ELSE GOTO 12900
15100 GOTO 12900
15110 REM Lines 5572-5624--Input data if there is a 5-year age difference b
etween the spouses
15120 YRR=ADBS-YRD
15130 LLE=LES-ADBS
15140 RL=17: NPS=0:
15150 IF ADBS=5 THEN GOTO 15160 ELSE GOTO 15390
15160 IF CONTR=1 THEN GOTO 15170 ELSE GOTO 15220
15170 CE=0:
15180 IF TAXPAYER=1 THEN C=3741.57 ELSE GOTO 15200
15190 GOTO 15270
15200 IF TAXPAYER=2 THEN C=6569.47 ELSE C=3613.31
15210 GOTO 15270
15220 CE=.12

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15230 IF TAXPAYER=1 THEN C=3861.31 ELSE GOTO 15250
15240 GOTO 15270
15250 IF TAXPAYER=2 THEN C=6781.39 ELSE C=3733.66
15260 REM Lines 5628-5640--To determine the amount of the IRA and the non-I
RA investment at the distribution date
15270 IBD=FB*(1-CE)*(1+RI)^YRD
15280 IB=IBD*(1+RI)^YRR
15290 ASCED=FB*CE*(1+RS*(1-TRI))^YRD
15300 ASCE=ASCED*(1+RS*(1-TRI))^YRR
15310 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
15320 REM To determine if both spouses are alive at the distribution date
15330 IF LLE=0 THEN GOTO 15040 ELSE GOTO 15350
15340 REM To go to determine the amount of annual annuity receipts
15350 GOSUB 15630
15360 IF TAXPAYER=2 THEN TRI=.25 ELSE GOTO 12900
15370 GOTO 12900
15380 REM Lines 5660-5696--Input data if there is a 10-year age difference
between the spouses
15390 IF CONTR=1 THEN GOTO 15400 ELSE GOTO 15450
15400 CE=0
15410 IF TAXPAYER=1 THEN C=5514.11 ELSE GOTO 15430
15420 GOTO 15270
15430 IF TAXPAYER=2 THEN C=9697.49 ELSE C=5309.14
15440 GOTO 15270
15450 CE=.12
15460 IF TAXPAYER=1 THEN C=5552.69 ELSE GOTO 15480
15470 GOTO 15270
15480 IF TAXPAYER=2 THEN C=9876.22 ELSE C=5420.72
15490 GOTO 15270
15500 REM Lines 5704-5764--To determine the amount of annual annuity receipt
s
15510 PVOA=8.02155
15520 AIB=IB/PVOA
15530 ACE=ASCE/PVOA
15540 RETURN
15550 PVOA=7.10336
15560 AIB=IB/PVOA
15570 ACE=ASCE/PVOA
15580 RETURN
15590 PVOA=7.37916
15600 AIB=IB/PVOA
15610 ACE=ASCE/PVOA
15620 RETURN
15630 PVOA=7.54879
15640 AIB=IB/PVOA
15650 ACE=ASCE/PVOA
15660 RETURN
15670 REM Lines 5768-6140--1986 tax rate schedules
15680 IF TI<=3670 THEN GOTO 15690 ELSE GOTO 15710
15690 ITIR=0
15700 GOTO 16010
15710 IF TI<=5940 THEN GOTO 15720 ELSE GOTO 15740
15720 ITIR=(TI-3670)*.11
15730 GOTO 16010
15740 IF TI<=8200 THEN GOTO 15750 ELSE GOTO 15770
15750 ITIR=249.7+((TI-5940)*.12)
15760 GOTO 16010
15770 IF TI<=12840 THEN GOTO 15780 ELSE GOTO 15800
15780 ITIR=520.9001+((TI-8200)*.14)
15790 GOTO 16010
15800 IF TI<=17270 THEN GOTO 15810 ELSE GOTO 15830
15810 ITIR=1170.5+((TI-12840)*.16)
15820 GOTO 16010
15830 IF TI<=21800 THEN GOTO 15840 ELSE GOTO 15860
15840 ITIR=1879.3+((TI-17270)*.18)
15850 GOTO 16010

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15860 IF TI<=26550 THEN GOTO 15870 ELSE GOTO 15890
15870 ITIR=2694.7+((TI-21800)*.22)
15880 GOTO 16010
15890 IF TI<=32270 THEN GOTO 15900 ELSE GOTO 15920
15900 ITIR=3739.7+((TI-26550)*.25)
15910 GOTO 16010
15920 IF TI<=37980! THEN GOTO 15930 ELSE GOTO 15950
15930 ITIR=5169.7+((TI-32270)*.28)
15940 GOTO 16010
15950 IF TI<=49420! THEN GOTO 15960 ELSE GOTO 15980
15960 ITIR=6785.5+((TI-37980!)*.33)
15970 GOTO 16010
15980 IF TI<=64750! THEN GOTO 15990 ELSE GOTO 16000
15990 ITIR=10543.7+((TI-49420!)*.38)
16000 GOTO 16010
16010 RETURN
16020 IF TI<=2480 THEN GOTO 16030 ELSE GOTO 16050
16030 ITIR=0
16040 GOTO 16350
16050 IF TI<=3670 THEN GOTO 16060 ELSE GOTO 16080
16060 ITIR=(TI-2480)*.11
16070 GOTO 16350
16080 IF TI<=4750 THEN GOTO 16090 ELSE GOTO 16110
16090 ITIR=130.9+((TI-3670)*.12)
16100 GOTO 16350
16110 IF TI<=7010 THEN GOTO 16120 ELSE GOTO 16140
16120 ITIR=260.5+((TI-4750)*.14)
16130 GOTO 16350
16140 IF TI<=9170 THEN GOTO 16150 ELSE GOTO 16170
16150 ITIR=576.9+((TI-7010)*.15)
16160 GOTO 16350
16170 IF TI<=11650 THEN GOTO 16180 ELSE GOTO 16200
16180 ITIR=900.9+((TI-9170)*.16)
16190 GOTO 16350
16200 IF TI<=13920 THEN GOTO 16210 ELSE GOTO 16230
16210 ITIR=1297.7+((TI-11650)*.18)
16220 GOTO 16350
16230 IF TI<=16190 THEN GOTO 16240 ELSE GOTO 16260
16240 ITIR=1706.3+((TI-13920)*.2)
16250 GOTO 16350
16260 IF TI<=19640 THEN GOTO 16270 ELSE GOTO 16290
16270 ITIR=2160.3+((TI-16190)*.23)
16280 GOTO 16350
16290 IF TI<=25360 THEN GOTO 16300 ELSE GOTO 16320
16300 ITIR=2953.8+((TI-19640)*.26)
16310 GOTO 16350
16320 IF TI<=31800 THEN GOTO 16330 ELSE GOTO 16340
16330 ITIR=4441!+((TI-25360)*.3)
16340 GOTO 16350
16350 RETURN
16360 IF TI<=92370! THEN GOTO 16370 ELSE GOTO 16390
16370 ITIR=16369.1+(TI-64750!)*.42)
16380 GOTO 16470
16390 IF TI<=118050! THEN GOTO 16400 ELSE GOTO 16420
16400 ITIR=27969.5+((TI-92370!)*.45)
16410 GOTO 16470
16420 IF TI<=175250! THEN GOTO 16430 ELSE GOTO 16450
16430 ITIR=39525.5+((TI-118050!)*.49)
16440 GOTO 16470
16450 ITIR=67553.5+((TI-175250!)*.5)
16460 GOTO 16470
16470 RETURN
16480 IF TI<=36800! THEN GOTO 16490 ELSE GOTO 16510
16490 ITIR=6157!+((TI-31080)*.34)
16500 GOTO 16610
16510 IF TI<=44780! THEN GOTO 16520 ELSE GOTO 16540
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16520 ITIR=8101.8+((TI-36800!)*.38)
16530 GOTO 16610
16540 IF TI<=59670! THEN GOTO 16550 ELSE GOTO 16570
16550 ITIR=11134.2+((TI-44780!)*.42)
16560 GOTO 16610
16570 IF TI<=88270! THEN GOTO 16580 ELSE GOTO 16600
16580 ITIR=17388!+((TI-59670!)*.48)
16590 GOTO 16610
16600 ITIR=31116!+((TI-88270!)*.5)
16610 RETURN
16620 REM To start estate tax calculations
16630 REM To determine the asset ownership
16640 IF SA=1 THEN TGOA=OA ELSE TGOA=.5*OA
16650 IF SA=1 THEN SGOA=0 ELSE SGOA=.5*OA
16660 REM To determine if taxpayer is subject to estate taxes
16670 IF TAXPAYER=3 THEN GOTO 16680 ELSE GOTO 17160
16680 UCE=600000!
16690 IF AGE=65 THEN GOTO 17080 ELSE GOTO 16710
16700 REM Lines 6164-6224--To determine the estate taxes if distribution is
    elected at age 70 1/2 and both spouses die before the taxpayer reaches age
    70 1/2
16710 IF LLET=2 AND LES=2 THEN GOTO 16720 ELSE GOTO 16880
16720 TTE=TGOA+AS
16730 STE=TTE
16740 GOSUB 17200
16750 TXET=TET-192800!
16760 SPTE=SGOA
16770 IF SPTE=0 THEN GOTO 16820 ELSE GOTO 16780
16780 STE=SPTE
16790 GOSUB 17200
16800 SPET=TET-192800!
16810 GOTO 16830
16820 SPET=0
16830 ET=TXET+SPET
16840 TT=IT+ET
16850 TABTB=TTE+SPTE-ET
16860 RETURN
16870 REM Lines 6228-6268--To determine the estate taxes if distribution is
    elected at age 70 1/2 and the taxpayer is the last surviving spouse
16880 IF LLET=LES THEN GOTO 16890 ELSE GOTO 16900
16890 GOTO 16720
16900 IF LLET>LES GOTO 16910 ELSE GOTO 17000
16910 IF SGOA=0 THEN ABTT=0 ELSE ABTT=SGOA-UCF
16920 TTE=TGOA+ABTT+AS
16930 STE=TTE
16940 GOSUB 17200
16950 ET=TET-192800!
16960 TT=IT+ET
16970 IF SGOA=0 THEN TABTB=TTE-ET ELSE TABTB=UCF+(TTE-ET)
16980 RETURN
16990 REM Lines 6272-6296--To determine the estate taxes if distribution is
    elected at age 70 1/2 and the spouse survives the taxpayer
17000 SPTE=SGOA+(TGOA-UCF)+AS
17010 STE=SPTE
17020 GOSUB 17200
17030 ET=TET-192800!
17040 TT=IT+ET
17050 TABTB=UCF+(SPTE-ET)
17060 RETURN
17070 REM Lines 6300-6340--To determine the estate taxes if distribution is
    elected at age 65
17080 IF LLET=2 AND LES=2 THEN GOTO 17090 ELSE GOTO 17140
17090 IF OPT=1 OR OPT=2 OR OPT=3 THEN GOTO 17100 ELSE GOTO 17120
17100 TTE=TGOA+AS
17110 GOTO 16730
17120 TTE=TGOA+IBD+ASCED

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17130 GOTO 16730
17140 IF LLET=LES GOTO 16890 ELSE GOTO 17150
17150 IF LLET>LES THEN GOTO 16910 ELSE GOTO 17000
17160 TT=IT
17170 TABTB=TGOA+SGOA+AS
17180 RETURN
17190 REM Lines 6344-6456--Estate tax rate schedule
17200 IF STE<=750000! THEN GOTO 17210 ELSE GOTO 17230
17210 TET=155800!+(STE-500000!)*.37
17220 RETURN
17230 IF STE<=1000000! THEN GOTO 17240 ELSE GOTO 17260
17240 TET=248300!+(STE-750000!)*.39
17250 RETURN
17260 IF STE<=1250000! THEN GOTO 17270 ELSE GOTO 17290
17270 TET=345800!+(STE-1000000!)*.41
17280 RETURN
17290 IF STE<=1500000! THEN GOTO 17300 ELSE GOTO 17320
17300 TET=448300!+(STE-1250000!)*.43
17310 RETURN
17320 IF STE<=2000000! THEN GOTO 17330 ELSE GOTO 17350
17330 TET=555800!+(STE-1500000!)*.45
17340 RETURN
17350 IF STE<=2500000! THEN GOTO 17360 ELSE GOTO 17380
17360 TET=780800!+(STE-2000000!)*.49
17370 RETURN
17380 IF LLET=2 AND LES=2 THEN GOTO 17390 ELSE GOTO 17460
17390 IF STE<=3000000! THEN GOTO 17400 ELSE GOTO 17420
17400 TET=1025800!+(STE-2500000!)*.53
17410 RETURN
17420 IF STE<=100000000000# THEN GOTO 17430 ELSE GOTO 17450
17430 TET=1290800!+(STE-3000000!)*.55
17440 RETURN
17450 RETURN
17460 IF STE<=100000000000# THEN GOTO 17470 ELSE GOTO 17450
17470 TET=1025800!+(STE-2500000!)*.5
17480 RETURN
17490 REM lines 6460-6532--TRA-1986 income tax rate schedules
17500 IF SS=1 THEN GOTO 17600 ELSE GOTO 17510
17510 IF TI <29750 THEN ITIR=TI*.15 ELSE GOTO 17530
17520 GOTO 17590
17530 IF TI < 71900! THEN ITIR=((TI-29750)*.28)+4462.5) ELSE GOTO 17550
17540 GOTO 17590
17550 RIT=((TI-29750)*.28)+4462.5
17560 EIT=(TI-71900!)*.05
17570 IF EIT < 4987.5 THEN AEIT=EIT ELSE AEIT=4987.5
17580 ITIR=RIT+AEIT
17590 RETURN
17600 IF TI < 17850 THEN ITIR=TI*.15 ELSE GOTO 17620
17610 GOTO 17680
17620 IF TI < 43150! THEN ITIR=((TI-17850)*.28)+2677.5) ELSE GOTO 17640
17630 GOTO 17680
17640 RIT=((TI-17850)*.28)+2677.5
17650 EIT=(TI-43150!)*.05
17660 IF EIT <2880.5 THEN AEIT=EIT ELSE AEIT=2880.5
17670 ITIR=RIT+AEIT
17680 RETURN

```

APPENDIX D

SPOUSE ELECTS DISTRIBUTION

TAX REFORM ACT OF 1986

```
1000 REM To sort so that proper taxpayer information is printed on output
1010 IF TAXPAYER=1 THEN GOTO 1020 ELSE GOTO 1160
1020 LPRINT "Taxpayer's Life Expectancy";
1030 LPRINT LLET
1040 LPRINT "Spouse's Life Expectancy";
1050 LPRINT LES
1060 LPRINT "Employee's Contribution";
1070 LPRINT CONTR
1080 LPRINT "Age Differences Between Spouses";
1090 LPRINT ADBS
1100 LPRINT "Pre-1974 Plan Participation";
1110 LPRINT P74
1120 LPRINT "Other Assets Owned By Spouse";
1130 LPRINT SA
1140 LPRINT
1150 LPRINT
1160 REM To sort because the options vary depending on the age difference b
etween the spouses
1170 IF ADBS=0 THEN GOTO 1720 ELSE GOTO 1180
1180 FOR OPT=1 TO 4
1190 IF OPT=1 THEN GOSUB 2010 ELSE GOTO 1210
1200 GOTO 1240
1210 IF OPT=2 THEN GOSUB 4540 ELSE GOTO 1230
1220 GOTO 1240
1230 IF OPT=3 THEN GOSUB 3090 ELSE GOSUB 5910
1240 LPRINT "Taxpayer";
1250 LPRINT TAXPAYER;
1260 LPRINT "Option";
1270 LPRINT OPT;
1280 LPRINT "Income Tax";
1290 LPRINT IT;
1300 LPRINT "Total Tax";
1310 LPRINT TT;
1320 LPRINT "Amount Bequeathed To Beneficiary";
1330 LPRINT TABTB
1340 LPRINT
1350 REM Opt=1 => Annuity
1360 IF OPT=1 THEN TABTB1=TABTB ELSE GOTO 1390
1370 GOTO 1450
1380 REM Opt=2 => Lump sum distribution
1390 IF OPT=2 THEN TABTB2=TABTB ELSE GOTO 1430
1400 GOTO 1450
1410 REM Opt=3 => IRA--Annuity
1420 REM Opt=4 => IRA--Lump sum distribution is invested
1430 IF OPT=3 THEN TABTB3=TABTB ELSE TABTB4=TABTB
1440 GOTO 1450
1450 NEXT
1460 LPRINT
1470 REM Lines 428-506--To determine the optimal distribution option if the
re is an age difference between the spouses
```

```

1480 IF TABTB1>TABTB2 THEN GOTO 1490 ELSE GOTO 1540
1490 IF TABTB1>TABTB3 THEN GOTO 1500 ELSE GOTO 1540
1500 IF TABTB1>TABTB4 THEN GOTO 1510 ELSE GOTO 1550
1510 LPRINT "Annuity";
1520 LPRINT TABTB1
1530 GOTO 1660
1540 IF TABTB2>TABTB3 THEN GOTO 1550 ELSE GOTO 1590
1550 IF TABTB2>TABTB4 THEN GOTO 1560 ELSE GOTO 1590
1560 LPRINT "Lump Sum Distribution";
1570 LPRINT TABTB2
1580 GOTO 1660
1590 IF TABTB3>TABTB4 THEN GOTO 1600 ELSE GOTO 1630
1600 LPRINT "IRA-Annuity";
1610 LPRINT TABTB3
1620 GOTO 1660
1630 LPRINT "IRA-Invested";
1640 LPRINT TABTB4
1650 GOTO 1660
1660 LPRINT
1670 LPRINT
1680 LPRINT
1690 RETURN
1700 END
1710 REM Options available if the spouses are the same age
1720 FOR OPT=1 TO 2
1730 REM Opt=1 => Annuity
1740 REM Opt=2 => Lump sum distribution
1750 IF OPT=1 THEN GOSUB 2010 ELSE GOSUB 4540
1760 GOTO 1770
1770 LPRINT "Taxpayer";
1780 LPRINT TAXPAYER;
1790 LPRINT "Option";
1800 LPRINT OPT;
1810 LPRINT "Income Tax";
1820 LPRINT IT;
1830 LPRINT "Total Tax";
1840 LPRINT TT;
1850 LPRINT "Amount Bequeathed To Beneficiary";
1860 LPRINT TABTB
1870 LPRINT
1880 REM Lines 575-600--To determine the optimal distribution option if the
    spouses are the same age
1890 IF OPT=1 THEN TABTB1=TABTB ELSE TABTB3=TABTB
1900 GOTO 1910
1910 NEXT
1920 LPRINT
1930 IF TABTB1>TABTB3 THEN GOTO 1940 ELSE GOTO 1970
1940 LPRINT "Annuity";
1950 LPRINT TABTB1
1960 GOTO 1660
1970 LPRINT "Lump Sum Distribution";
1980 LPRINT TABTB3
1990 GOTO 1660
2000 REM Start of the program if Opt=1
2010 ASA=0: ASAS=0: AAE=0: ASA3=0:
2020 REM Lines 624-675--Input data
2030 IF TAXPAYER=1 THEN GOTO 2040 ELSE GOTO 2060
2040 FB=70000!: RI=.08: RS=.06: TRI=.15: RP=9.000001E-02: OA=50000!
2050 GOTO 2100
2060 IF TAXPAYER=2 THEN GOTO 2070 ELSE GOTO 2090
2070 FB=140000!: RI=.08: RS=.08: TRI=.25: RP=9.000001E-02: OA=150000!
2080 GOTO 2100
2090 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.31: RP=9.000001E-02: OA=2000
    000!:
2100 IF CONTR=1 THEN GOTO 2110 ELSE GOTO 2160
2110 CE=0:

```

```

2120 IF TAXPAYER=1 THEN C=3706.02 ELSE GOTO 2140
2130 GOTO 2200
2140 IF TAXPAYER=2 THEN C=7075.56 ELSE C=3208.93
2150 GOTO 2200
2160 CE=.12:
2170 IF TAXPAYER=1 THEN C=3783.13 ELSE GOTO 2190
2180 GOTO 2200
2190 IF TAXPAYER=2 THEN C=7315.47 ELSE C=3344.18
2200 YRD=2:
2210 REM To determine the longest life expectancy of spouses
2220 IF LLET<LES THEN LLE=LES-YRD ELSE LLE=LLET-YRD
2230 REM To determine the retirement fund balance at the death of the taxpayer
2240 FBD=FB*(1+RP)^YRD
2250 REM Lines 684-699--To sort based on the age difference between the spouses
2260 IF ADBS=0 THEN GOTO 2270 ELSE GOTO 2290
2270 RL=16: PVOA=7.37916
2280 GOTO 2340
2290 IF ADBS=5 THEN GOTO 2300 ELSE GOTO 2320
2300 RL=19: PVOA=7.83929
2310 GOTO 2340
2320 RL=22: PVOA=8.17574
2330 REM To determine the amount of the annual annuity receipts
2340 A=FBD/PVOA
2350 REM Inclusion ratio
2360 IF CONTR=1 THEN GOTO 2950 ELSE IR=1-((CE*FB)/(A*RL))
2370 REM The amount of exclusion each year
2380 ER=1-IR
2390 REM The employee's investment in the annuity
2400 EIIA=CE*FB
2410 REM Lines 721-753--To determine the income taxes that relate to the annuity
2420 FOR I=1 TO LLE
2430 IF AAE < EIIA THEN GOTO 2440 ELSE GOTO 2670
2440 AAE=AAE + (A*ER)*(I-(I-1))
2450 NEXT
2460 URC=EIIA-AAE
2470 LLE1=LLE-1
2480 ITA1=A*IR*TRI*LLE1
2490 ITA2=((A*IR)-URC)*TRI
2500 ITA=ITA1+ITA2
2510 REM lines 757-785--To determine the amount of annual savings and the accumulated savings
2520 S=(A*(1-(IR*TRI)))^C
2530 FOR I=1 TO LLE1
2540 ASA=ASA+(S*(1+RS*(1-TRI))^(LLE1-I))
2550 NEXT
2560 ASA1=A-ITA2
2570 IF ASA1 > C THEN ASA2=ASA1-C ELSE ASA2=0
2580 ASA3=ASA*(RS*(1-TRI))
2590 AS=ASA+ASA2+ASA3
2600 ITAS=((AS-(S*LLE1)-ASA2)/(1-TRI))*TRI
2610 REM Total income taxes
2620 IT=ITA+ITAS
2630 REM To go to calculate the estate taxes and the amount bequeathed to beneficiaries
2640 GOSUB 6910
2650 RETURN
2660 REM Lines 805-833--To determine the income taxes that relate to the annuity if the sum of the exclusions exceeds the employee's investment in the annuity during the spouse's lifetime
2670 NOY=I-1
2680 LLE1=NOY-1
2690 ITA1=(A*IR*TRI*LLE1)
2700 RAAE=(A*ER)-(AAE-EIIA)

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2710 ITA2=(A-RAAE)*TRI
2720 LLE2=LLE-NOY
2730 ITA3=A*TRI*LLE2
2740 ITA=ITA1+ITA2+ITA3
2750 REM Lines 837-881--To determine the amount of annual savings and the a
ccumulated savings
2760 S1=(A*(1-(IR*TRI)))-C
2770 S2=((A-RAAE)*(1-TRI))+RAAE-C
2780 S3=(A*(1-TRI))-C
2790 LLE3=LLE-LLE1
2800 FOR I=1 TO LLE1
2810 ASA=ASA+(S1*(1+RS*(1-TRI))^(LLE1-I))*(1+RS*(1-TRI))^LLE3
2820 NEXT
2830 ASA2=S2*(1+RS*(1-TRI))^(LLE2)
2840 FOR I=1 TO LLE2
2850 ASA3=ASA3+(S3*(1+RS*(1-TRI))^(LLE2-I))
2860 NEXT
2870 AS=ASA+ASA2+ASA3
2880 ITAS=((AS-(S1*LLE1)-S2-(S3*LLE2))/(1-TRI))*TRI
2890 REM Total income taxes
2900 IT=ITA+ITAS
2910 REM To go to calculate the estate taxes and the amount bequeathed to b
eneficiaries
2920 GOSUB 6910
2930 RETURN
2940 REM To determine the income taxes that relate to the annuity if the em
ployee does not have any contributions to the retirement plan
2950 ITA=(A*TRI*LLE)+(0.5*A*TRI*NPS)
2960 REM lines 905-921--To determine the amount of annual savings and the a
ccumulated savings
2970 S=(A*(1-TRI))-C
2980 FOR I=1 TO LLE
2990 ASA=ASA+(S*(1+RS*(1-TRI))^(LLE-I))
3000 NEXT
3010 AS=ASA
3020 ITAS=((AS-(S*LLE))/(1-TRI))*TRI
3030 REM Total income taxes
3040 IT=ITA+ITAS
3050 REM To go to calculate the estate taxes and the amount bequeathed to b
eneficiaries
3060 GOSUB 6910
3070 RETURN
3080 REM To start the program if Opt=3
3090 ASA=0: AAE=0: ASA3=0:
3100 REM Lines 945-973--Input data
3110 IF TAXPAYER=1 THEN GOTO 3120 ELSE GOTO 3140
3120 FB=70000!: RI=.08: RS=.06: TRI=.15: RP=9.000001E-02: OA=50000!:
3130 GOTO 4040
3140 IF TAXPAYER=2 THEN GOTO 3150 ELSE GOTO 3170
3150 FB=140000!: RI=.08: RS=.08: TRI=.25: RP=9.000001E-02: OA=150000!:
3160 GOTO 4040
3170 FB=275000!: RI=.08: RS=9.000001E-02: TRI=.31: RP=9.000001E-02: OA=2000
000!:
3180 GOTO 4040
3190 REM Inclusion ratio
3200 IF CONTR=1 THEN GOTO 3830 ELSE IRCE=1-((ASCE)/(ACE*RL))
3210 REM The amount of exclusion each year
3220 ER=1-IRCE
3230 REM The employee's investment in the annuity
3240 EIIA=ASCE
3250 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
3260 REM Lines 993-1025--To determine the income taxes that relate to the a
nnuity
3270 FOR I=1 TO LLE
3280 IF AAE < EIIA THEN GOTO 3290 ELSE GOTO 3530
3290 AAE=AAE + (ACE*ER)*(I-(I-1))

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3300 NEXT
3310 URC=EIIA-AAE
3320 LLE1=LLE-1
3330 ITA1=(ACE*IRCE*TRI*LLE1)+(AIB*TRI*LLE1)
3340 ITA2=((ACE*IRCE)-URC)*TRI+(AIB*TRI)
3350 ITA=ITA1+ITA2
3360 REM Lines 1029-1057--To determine the amount of annual savings and the
    accumulated savings
3370 S=(ACE*(1-(IRCE*TRI)))+(AIB*(1-TRI))-C
3380 FOR I=1 TO LLE1
3390 ASA=ASA+(S*(1+RS*(1-TRI))^(LLE1-I))
3400 NEXT
3410 ASA1=(ACE+AIB-ITA2)
3420 IF ASA1 > C THEN ASA2=ASA1-C ELSE ASA2=0
3430 ASA3=ASA*(RS*(1-TRI))
3440 AS=ASA+ASA2+ASA3
3450 ITAS=((AS-(S*LLE1)-ASA2)/(1-TRI))*TRI
3460 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
3470 REM Total income taxes
3480 IT=ITA+ITAS+ITCE
3490 REM To go to calculate the estate taxes and the amount bequeathed to b
    eneficiaries
3500 GOSUB 6910
3510 RETURN
3520 REM Lines 1081-1113--To determine the income taxes on the annuity rece
    pts if the employee's investment in the plan is recovered before the spous
    e's death
3530 NOY=I-1
3540 LLE1=NOY-1
3550 ITA1=(ACE*IRCE*TRI*LLE1)
3560 RAAE=((ACE*ER)-(AAE-EIIA))
3570 ITA2=(ACE-RAAE)*TRI
3580 LLE2=LLE-NOY
3590 ITA3=ACE*TRI*LLE2
3600 ITA4=AIB*TRI*LLE
3610 ITA=ITA1+ITA2+ITA3+ITA4
3620 REM Lines 1117-1161--To determine the amount of annual savings and the
    accumulated savings
3630 S1=(ACE*(1-(IRCE*TRI)))+(AIB*(1-TRI))-C
3640 S2=((ACE-RAAE+AIB)*(1-TRI))+RAAE-C
3650 S3=((ACE+AIB)*(1-TRI))-C
3660 LLE3=LLE-LLE1
3670 FOR I=1 TO LLE1
3680 ASA=ASA+(S1*(1+RS*(1-TRI))^(LLE1-I))*(1+RS*(1-TRI))^(LLE3)
3690 NEXT
3700 ASA2=S2*(1+RS*(1-TRI))^(LLE2)
3710 FOR I=1 TO LLE2
3720 ASA3=ASA3+(S3*(1+RS*(1-TRI))^(LLE2-I))
3730 NEXT
3740 AS=ASA+ASA2+ASA3
3750 ITAS=((AS-(S1*LLE1)-S2-(S3*LLE2))/(1-TRI))*TRI
3760 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
3770 REM Total income taxes
3780 IT=ITA+ITAS+ITCE
3790 REM To go to calculate the estate taxes and the amount bequeathed to b
    eneficiaries
3800 GOSUB 6910
3810 REM The income taxes that relate to the annuity if the taxpayer did no
    t have any employee contributions to the retirement plan
3820 RETURN
3830 ITA=(AIB*TRI*LLE)
3840 REM To determine if the spouse is alive at distribution date
3850 IF LLET < 3 AND LLE=0 THEN AS=IB ELSE GOTO 3920
3860 REM Total income taxes if both spouses die before distribution date
3870 IT=0
3880 REM To go to calculate the estate taxes and the amount bequeathed to b

```

```

eneficiaries
3890 GOSUB 6910
3900 RETURN
3910 REM Lines 1205-1221--To determine the amount of annual savings and the
    accumulated savings if the taxpayer did not have any employee contribution
    s to the retirement plan
3920 S=(AIB*(1-TRI))-C
3930 FOR I=1 TO LLE
3940 ASA=ASA+S*(1+RS*(1-TRI))^(LLE-I)
3950 NEXT
3960 AS=ASA
3970 ITAS=((AS-(S*LLE))/(1-TRI))*TRI
3980 REM Total income taxes
3990 IT=ITA+ITAS
4000 GOSUB 6910
4010 REM To go to calculate the estate taxes and the amount bequeathed to b
eneficiaries
4020 RETURN
4030 REM Lines 1241-1253--Input data
4040 YRD=2
4050 YRR=ADBS-YRD
4060 LLE=LES-ADBS
4070 RL=17
4080 REM To sort because age difference between the spouses affects the amo
    unt of annual annuity receipts
4090 IF ADBS=5 THEN GOTO 4110 ELSE GOTO 4360
4100 REM Lines 1261-1297--Input data if there is a 5-year age difference be
    tween the spouses
4110 IF CONTR=1 THEN GOTO 4120 ELSE GOTO 4170
4120 CE=0:
4130 IF TAXPAYER=1 THEN C=3811.84 ELSE GOTO 4150
4140 GOTO 4220
4150 IF TAXPAYER=2 THEN C=6693.47 ELSE C=3680.53
4160 GOTO 4220
4170 CE=.12
4180 IF TAXPAYER=1 THEN C=3960.38 ELSE GOTO 4200
4190 GOTO 4220
4200 IF TAXPAYER=2 THEN C=6948.58 ELSE C=3822.3
4210 REM Lines 1301-1309--To determine the IRA balance and the non-IRA inve
    stment balance on the date of the taxpayer's death
4220 FBD=FB*(1+RP)^YRD
4230 IB=FBD*(1-CE)*(1+RI)^YRR
4240 ASCE=FBD*CE*(1+RS*(1-TRI))^YRR
4250 ITCE=((ASCE-(FB*CE))/(1-TRI))*TRI
4260 IF LLE=0 THEN AS=IB+ASCE ELSE GOTO 4320
4270 IT=ITCE
4280 REM To go to calculate the estate taxes and the amount bequeathed to b
eneficiaries
4290 GOSUB 6910
4300 RETURN
4310 REM To go to determine the amount of annual annuity receipts
4320 GOSUB 4480
4330 REM To go to determine the total income taxes
4340 GOTO 3200
4350 REM Lines 1337-1377--Input data if there is a 10-year age difference b
    etween the spouses
4360 IF CONTR=1 THEN GOTO 4370 ELSE GOTO 4420
4370 CE=0
4380 IF TAXPAYER=1 THEN C=5617.35 ELSE GOTO 4400
4390 GOTO 4220
4400 IF TAXPAYER=2 THEN C=9879.68 ELSE C=5407.92
4410 GOTO 4220
4420 CE=.12
4430 IF TAXPAYER=1 THEN C=5696.8 ELSE GOTO 4450
4440 GOTO 4220
4450 IF TAXPAYER=2 THEN C=10114.27 ELSE C=5547.49

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4460 GOTO 4220
4470 REM Lines 1381-1393--To determine the amount of annual annuity receipt
s
4480 PVOA=7.54879
4490 AIB=IB/PVOA
4500 ACE=ASCE/PVOA
4510 RETURN
4520 REM To start the program if Opt=2
4530 REM Lines 1397-1461--Input data
4540 IF TAXPAYER=1 THEN GOSUB 4560 ELSE GOSUB 4580
4550 GOTO 4640
4560 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=35000!: OTI=1000: RP=9.00
0001E-02: OA=50000!:
4570 RETURN
4580 IF TAXPAYER=2 THEN GOSUB 4600 ELSE GOSUB 4620
4590 RETURN
4600 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.15: NAI=70000!: OTI=12000!: RP
=9.000001E-02: OA=150000!:
4610 RETURN
4620 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.31: NAI=140000!: OTI=
170000!:RP=9.000001E-02: OA=2000000!:
4630 RETURN
4640 IF CONTR=1 THEN GOSUB 4660 ELSE GOSUB 4680
4650 GOTO 4700
4660 CE=0: YRD=2:
4670 RETURN
4680 CE=.12: YRD=2:
4690 RETURN
4700 ASAT=0: ASAS=0: SILS=0
4710 REM To determine the retirement fund balance at the death of the taxpa
yer
4720 FBD=FB*(1+RP)^YRD
4730 LLE=LES-YRD
4740 REM Lines 1473-1481--To determine the income taxes on the other taxabl
e income
4750 TI=OTI
4760 IF TI<=31080! THEN GOSUB 6410 ELSE GOSUB 6750
4770 TOTI=ITIR
4780 REM To sort because pre-1974 participation in the plan affects the inc
ome taxes
4790 IF P74=0 THEN GOTO 4810 ELSE GOTO 5300
4800 REM Lines 1489-1537--To determine the 10-year averaging income taxes
4810 TLSD=(FBD*(1-CE))+2390
4820 IF TLSD>70000! THEN GOTO 4830 ELSE GOTO 4870
4830 TI=((FBD*(1-CE)*.1)+2480)
4840 IF TI<31080 THEN GOSUB 6410 ELSE GOSUB 6750
4850 IT10A=(ITIR*10)+TOTI
4860 GOTO 4950
4870 IF TLSD<=20000 THEN GOTO 4900 ELSE GOTO 4880
4880 MDA=(10000-((TLSD-20000)*.2))
4890 GOTO 4910
4900 MDA=10000
4910 TI=((TLSD-MDA)*.1)+2480
4920 IF TI<31080 THEN GOSUB 6410 ELSE GOSUB 6750
4930 IT10A=(ITIR*10)+TOTI
4940 REM Lines 1541-1549--To determine the income taxes on the other taxabl
e income
4950 TI=OTI
4960 GOSUB 7430
4970 TOTI5=ITIR
4980 REM Lines 1553-1601--To determine the 5-year averaging income taxes
4990 TLSD=(FB*(1-CE))
5000 IF TLSD>70000! THEN GOTO 5010 ELSE GOTO 5050
5010 TI=(FB*(1-CE)*.2)
5020 GOSUB 7430
5030 ITS5A=(ITIR*5)+TOTI5

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5040 GOTO 5130
5050 IF TLSD<=20000 THEN GOTO 5080 ELSE GOTO 5060
5060 MDA=(10000-((TLSD-20000)*.2))
5070 GOTO 5090
5080 MDA=10000
5090 TI=((TLSD-MDA)*.2)
5100 GOSUB 7430
5110 IT5A=(ITIR*5)+TOTI5
5120 REM Lines 1605-1613--To determine the income taxes on the current taxable income
5130 CTI=OTI+(FB*(1-CE))
5140 TI=CTI
5150 GOSUB 7430
5160 REM Lines 1617-1629--To determine the lowest income taxes from the 10-year averaging, 5-year averaging or regular
5170 IF IT5A<ITIR THEN GOTO 5180 ELSE GOTO 5230
5180 IF P74=0 THEN GOTO 5210 ELSE GOTO 5190
5190 ITLS=IT5A-TOTI5
5200 GOTO 5760
5210 IF IT5A<IT10A THEN ITLS=IT5A-TOTI5 ELSE GOTO 5260
5220 GOTO 5760
5230 IF P74=0 THEN GOTO 5260 ELSE GOTO 5240
5240 ITLS=ITIR-TOTI5
5250 GOTO 5760
5260 IF ITIR<IT10A THEN ITLS=ITIR-TOTI5 ELSE ITLS=IT10A-TOTI
5270 REM To go to determine the income taxes after distribution
5280 GOTO 5760
5290 REM Lines 1637-1701--To determine the 10-year averaging income taxes if the taxpayer had pre-1974 participation
5300 TI=(FBD*(1-CE)*P74*.4)+OTI
5310 IF TI<31080 THEN GOSUB 6410 ELSE GOSUB 6750
5320 TCGD=ITIR
5330 TFB=FBD*(1-CE)*(1-P74)
5340 IF TFB>=70000! THEN GOTO 5350 ELSE GOTO 5390
5350 TI=(TFB*.1)+2480
5360 IF TI<31080 THEN GOSUB 6410 ELSE GOSUB 6750
5370 TOID=ITIR*10
5380 GOTO 5460
5390 IF TFB<=20000 THEN GOTO 5420 ELSE GOTO 5400
5400 MDA=(10000-((TFB-20000)*.2))
5410 GOTO 5430
5420 MDA=10000
5430 TI=(((FBD*(1-CE)*(1-P74))-MDA)*.1)+2480)
5440 IF TI<31080 THEN GOSUB 6410 ELSE GOSUB 6750
5450 TOID=ITIR*10
5460 T10ACG=TCGD+TOID
5470 REM Lines 1705-1713--To determine the income taxes on other taxable income
5480 TI=OTI
5490 GOSUB 7430
5500 TOTI5=ITIR
5510 REM Lines 1717-1773--To determine the 5-year averaging income taxes
5520 TCGD=TOTI5+(FB*(1-CE)*P74*.2)
5530 TFB=FB*(1-CE)*(1-P74)
5540 IF TFB >=70000! THEN GOTO 5550 ELSE GOTO 5590
5550 TI=(TFB*.2)
5560 GOSUB 7430
5570 TOID=ITIR*5
5580 GOTO 5660
5590 IF TFB<=20000 THEN GOTO 5620 ELSE GOTO 5600
5600 MDA=(1000-((TFB-20000)*.2))
5610 GOTO 5630
5620 MDA=10000
5630 TI=(((FB*(1-CE)*(1-P74))-MDA)*.2)
5640 GOSUB 7430
5650 TOID=ITIR*5

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5660 TSACG=TCGD+TOID
5670 REM Lines 1777-1781--To determine the income taxes on current taxable
income
5680 TI=OTI+(FB*(1-CE))
5690 GOSUB 7430
5700 REM Lines 1785-1797--To determine the lowest income taxes from 10-year
averaging, 5-year averaging or regular
5710 IF TSACG<T10ACG THEN GOTO 5720 ELSE 5740
5720 IF TSACG < ITIR THEN ITLS=TSACG-TOTI5 ELSE GOTO 5740
5730 GOTO 5760
5740 IF T10ACG < ITIR THEN ITLS=T10ACG-TOTI ELSE ITLS=ITIR-TOTI5
5750 REM The after tax investment
5760 IV=FBD-ITLS
5770 REM 1805-1829--To determine the accumulated savings
5780 IF LLE=0 THEN SILS=0 ELSE GOTO 5800
5790 GOTO 5830
5800 FOR I=1 TO LLE
5810 SILS=SILS+(IV*RS*(1-TRI)*S*(1+RS*(1-TRI))^(LLE-I))
5820 NEXT
5830 ASILS=IV+SILS
5840 AS=ASILS
5850 REM Total income taxes
5860 IT=ITLS+(IV*RS*TRI*LLE)+((ASILS-IV-(IV*RS*(1-TRI)*S*LLE))/(1-TRI))*TRI

5870 REM To go to calculate the estate taxes and the amount bequeathed to b
eneficiaries
5880 GOSUB 6910
5890 RETURN
5900 REM To start the program if Opt=4
5910 ASI=0:
5920 REM Lines 1849-1917--Input data
5930 IF TAXPAYER=1 THEN GOSUB 5950 ELSE GOSUB 5970
5940 GOTO 6030
5950 FB=70000!: RI=.08: S=0: RS=.06: TRI=.15: NAI=35000!: OTI=1000: RP=9.00
0001E-02: OA=50000!:
5960 RETURN
5970 IF TAXPAYER=2 THEN GOSUB 5990 ELSE GOSUB 6010
5980 RETURN
5990 FB=140000!: RI=.08: S=.25: RS=.08: TRI=.25: NAI=70000!: OTI=12000!: RP
=9.000001E-02: OA=150000!:
6000 RETURN
6010 FB=275000!: RI=.08: S=.8: RS=9.000001E-02: TRI=.31: NAI=140000!: OTI=
170000!: RP=9.000001E-02: OA=2000000!:
6020 RETURN
6030 IF CONTR=1 THEN GOSUB 6050 ELSE GOSUB 6070
6040 GOTO 6090
6050 CE=0: YRD=2:
6060 RETURN
6070 CE=.12: YRD=2:
6080 RETURN
6090 YRR=ADBS-YRD
6100 LLE=LES-ADBS:
6110 REM Lines 1921-1929--To determine the IRA balance and the non-IRA inve
stments at distribution date
6120 FBD=FB*(1+RP)^YRD
6130 IB=FBD*(1-CE)*(1+RI)^YRR
6140 ASCE=FBD*CE*(1+RS*(1-TRI))^YRR
6150 ITCE=((ASCE-(FBD*CE))/(1-TRI))*TRI
6160 REM Lines 1937-1945--To determine the income taxes on other taxable in
come
6170 TI=OTI
6180 GOSUB 7430
6190 TOTI=ITIR
6200 REM Lines 1949-1957--To determine the income taxes on the lump sum dis
tribution from the IRA
6210 TI=OTI+IB

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6220 GOSUB 7430
6230 ITI=ITIR-TOTI
6240 REM The after tax investment
6250 IV=(IB-ITI)+ASCE
6260 REM Lines 1965-1989--To determine the accumulated savings
6270 IF LLE=0 THEN AS=IB+ASCE ELSE GOTO 6300
6280 IT=ITCE
6290 GOTO 6380
6300 FOR I=1 TO LLE
6310 ASI=ASI+(IV*RS*(1-TRI)*S)*(1+RS*(1-TRI))^(LLE-I)
6320 NEXT
6330 ASII=ASI+IV
6340 REM Total income taxes
6350 IT=ITI+ITCE+(IV*RS*TRI*LLE)+((ASII-IV-(IV*RS*(1-TRI)*S*LLE))/(1-TRI))*
TRI
6360 AS=ASII
6370 REM To go to calculate the estate taxes and the amount bequeathed to b
eneficiaries
6380 GOSUB 6910
6390 RETURN
6400 REM Lines 2009-2197--1986 income tax rate schedules
6410 IF TI<=2480 THEN GOTO 6420 ELSE GOTO 6440
6420 ITIR=0
6430 GOTO 6740
6440 IF TI<=3670 THEN GOTO 6450 ELSE GOTO 6470
6450 ITIR=(TI-2480)*.11
6460 GOTO 6740
6470 IF TI<=4750 THEN GOTO 6480 ELSE GOTO 6500
6480 ITIR=130.9+((TI-3670)*.12)
6490 GOTO 6740
6500 IF TI<=7010 THEN GOTO 6510 ELSE GOTO 6530
6510 ITIR=260.5+((TI-4750)*.14)
6520 GOTO 6740
6530 IF TI<=9170 THEN GOTO 6540 ELSE GOTO 6560
6540 ITIR=576.9+((TI-7010)*.15)
6550 GOTO 6740
6560 IF TI<=11650 THEN GOTO 6570 ELSE GOTO 6590
6570 ITIR=900.9+((TI-9170)*.16)
6580 GOTO 6740
6590 IF TI<=13920 THEN GOTO 6600 ELSE GOTO 6620
6600 ITIR=1297.7+((TI-11650)*.18)
6610 GOTO 6740
6620 IF TI<=16190 THEN GOTO 6630 ELSE GOTO 6650
6630 ITIR=1706.3+((TI-13920)*.2)
6640 GOTO 6740
6650 IF TI<=19640 THEN GOTO 6660 ELSE GOTO 6680
6660 ITIR=2160.3+((TI-16190)*.23)
6670 GOTO 6740
6680 IF TI<=25360 THEN GOTO 6690 ELSE GOTO 6710
6690 ITIR=2953.8+((TI-19640)*.26)
6700 GOTO 6740
6710 IF TI<=31080 THEN GOTO 6720 ELSE GOTO 6730
6720 ITIR=4441!+((TI-25360)*.3)
6730 GOTO 6740
6740 RETURN
6750 IF TI<=36800! THEN GOTO 6760 ELSE GOTO 6780
6760 ITIR=6157!+((TI-31080)*.34)
6770 GOTO 6880
6780 IF TI<=44780! THEN GOTO 6790 ELSE GOTO 6810
6790 ITIR=8101.8+((TI-36800!)*.38)
6800 GOTO 6880
6810 IF TI<=59670! THEN GOTO 6820 ELSE GOTO 6840
6820 ITIR=11134.2+((TI-44780!)*.42)
6830 GOTO 6880
6840 IF TI<=88270! THEN GOTO 6850 ELSE GOTO 6870
6850 ITIR=17388!+((TI-59670!)*.48)

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6860 GOTO 6880
6870 ITIR=31116!+((TI-88270!)*.5)
6880 RETURN
6890 REM To start estate tax calculations
6900 REM To determine if taxpayer is subject to estate taxes
6910 IF TAXPAYER=3 GOTO 6920 ELSE GOTO 7050
6920 OA=2000000!: UCE=600000!:
6930 REM Lines 2209-2221--To determine the ownership of the assets
6940 IF SA=1 THEN TGOA=OA ELSE TGOA=.5*OA
6950 TGE=TGOA+FBD
6960 ABTS=TGE-UCE
6970 IF SA=1 THEN SGOA=0 ELSE SGOA=.5*OA
6980 REM Lines 2225-2245--To determine the estate taxes and the amount bequeathed to beneficiaries by the high taxpayer
6990 STE=(ABTS-FBD)+SGOA+AS
7000 GOSUB 7130
7010 ET=TET-192800!
7020 TT=IT+ET
7030 TABTB=UCE+(STE-ET)
7040 RETURN
7050 TT=IT
7060 REM Lines 2253-2257--To determine the ownership of the assets for the low and middle taxpayer
7070 IF SA=1 THEN TGOA=OA ELSE TGOA=.5*OA
7080 IF SA=1 THEN SGOA=0 ELSE SGOA=.5*OA
7090 REM To determine the amount bequeathed to beneficiaries by the low and middle taxpayer
7100 TABTB=TGOA+SGOA+AS
7110 RETURN
7120 REM Lines 2269-2381--Estate tax rate schedule
7130 IF STE<=750000! THEN GOTO 7140 ELSE GOTO 7160
7140 TET=155800!+(STE-500000!)*.37
7150 RETURN
7160 IF STE<=1000000! THEN GOTO 7170 ELSE GOTO 7190
7170 TET=248300!+(STE-750000!)*.39
7180 RETURN
7190 IF STE<=1250000! THEN GOTO 7200 ELSE GOTO 7220
7200 TET=345800!+(STE-1000000!)*.41
7210 RETURN
7220 IF STE<=1500000! THEN GOTO 7230 ELSE GOTO 7250
7230 TET=448300!+(STE-1250000!)*.43
7240 RETURN
7250 IF STE<=2000000! THEN GOTO 7260 ELSE GOTO 7280
7260 TET=555800!+(STE-1500000!)*.45
7270 RETURN
7280 IF STE<=2500000! THEN GOTO 7290 ELSE GOTO 7310
7290 TET=780800!+(STE-2000000!)*.49
7300 RETURN
7310 IF LLET=2 AND LES=2 THEN GOTO 7320 ELSE GOTO 7390
7320 IF STE<=3000000! THEN GOTO 7330 ELSE GOTO 7350
7330 TET=1025800!+(STE-2500000!)*.53
7340 RETURN
7350 IF STE<=1000000000000# THEN GOTO 7360 ELSE GOTO 7380
7360 TET=1290800!+(STE-3000000!)*.55
7370 RETURN
7380 RETURN
7390 IF STE<=1000000000000# THEN GOTO 7400 ELSE GOTO 7380
7400 TET=1025800!+(STE-2500000!)*.5
7410 RETURN
7420 REM Lines 2385-2417--TRA-1986 income tax rate schedules
7430 IF TI < 17850 THEN ITIR=TI*.15 ELSE GOTO 7450
7440 RETURN
7450 IF TI < 43150! THEN ITIR=((TI-17850)*.28)+2677.5 ELSE GOTO 7470
7460 RETURN
7470 RIT=((TI-17850)*.28)+2677.5
7480 EIT=(TI-43150!)*.05

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7490 IF EIT < 2880.5 THEN AEIT=EIT ELSE AEIT=2880.5
7500 ITIR=RIT+AEIT
7510 RETURN
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VITA

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Candidate for the Degree of

Doctor of Philosophy

Thesis: SELECTION OF QUALIFIED RETIREMENT PLAN DISTRIBUTION
OPTIONS: A SIMULATION

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